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DOMESTIC MEDICINE

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Hospital and Dispensary; Clinical Medicine Prizeman and Associate of
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DOMESTIC MEDICINE.

DIGESTION AND DIET.

Digestion is the process by which all the nutritive parts of the food passing through the alimentary canal are rendered fit for absorption into the blood, and for the nutrition of the system, as well as for the production of animal heat. The functions of digestion and respiration are the two most important vital processes going on in living organisms; for unless they be duly performed, the system soon flags, and in the latter case life may be quickly extinguished. A large proportion of the cases which come under the care of the medical man may be traced to impaired digestive organs, and consequent malassimilation of the food, as gout, and indigestion in its various forms, with all its accompanying affections—nervousness, low spirits, headache, nausea, and sickness.

Food is divided into *nutritive*, or *plastic*, and *calorifacient*—the former being easily converted into the nutritive materials of the blood, and subsequently taken up by the different tissues of the body; the latter consisting of fat, sugar, and other such elements of food as contribute mainly to the production of animal heat, and hence sometimes called *respiratory*. The nutritive elements contain nitrogen, and the calorifacient, or respiratory, are rich in carbon and hydrogen.

Dr. Prout treats of food under four heads:—(1) the *Albuminous* group consists of nitrogenous food, as albumen, fibrin, and casein, from the animal, and gluten and legumin from the vegetable kingdom; (2) the *Saccharine* group is derived exclusively from the vegetable kingdom, and consists of sugar itself and various other substances readily convertible into sugar—such as starch, gum, and pectine; (3) the *Oleaginous* group includes oily and fatty matters which are rich in carbon and hydrogen: the fourth group consists of the *Aqueous* portions of food. Of these four groups, the nitrogenous maintains the healthy nutrition of the system, producing muscle and nerve; while the saccharine and oleaginous tend to produce fat, and minister to the important function of respiration. The diet of a healthy person must consist of both organic and inorganic elements, and must provide materials for nutrition, respiration, and the production of animal heat. When the diet is restricted to the organic elements of food, as is too often the case with sailors as seen in our large hospitals, and the saline constituents have been withdrawn, scurvy is rife amongst them, and may be cured by the exhibition of lemon juice, or fresh vegetables, which are rich in saline constituents; the same thing may be effected also by the administration of the salts of potash, thus proving that the lack of the saline constituents of food is the immediate cause of this loathsome disease. Thus we have seen that the food must be made up of organic and inorganic substances, and the organic portion must consist of a mixture of nitrogenous and non-nitrogenous substances: for dogs fed on sugar and distilled water by Magendie gradually became emaciated, and died towards the end of the fourth week, thus proving that carbonaceous food will not supply all the wants of the system. Food, besides being composed of all the various elements previously mentioned, must be varied from day to day, no animals being able to live on one kind of food for any length of time: thus, a dog fed on white bread and water lived only fifty days; rabbits fed exclusively on carrots died in fifteen days. (*Magendie.*) By a wise provision of nature, animals may be fed exclusively on milk, because it contains a mixture of the organic and inorganic constituents of food—casein representing albumen, butter oil, and sugar of milk representing the saccharine group; besides these it contains water, phosphate of lime, salts, and a trace of iron. Thus, we have in this fluid an albuminous material, casein, supporting the various organs of the body—lactose or sugar of milk producing fat, and supplying materials for respiration; phosphate of lime maintaining the due hardness of the bones; and iron and various salts to keep up the normal composition of the blood.

The food upon being introduced into the mouth is triturated by the cutting and grinding action of the incisor and molar teeth, at the same time being mixed with the saliva, by the action of which fluid the mouth is kept moist, and the amylaceous portion of the food converted into dextrine, or grape sugar, starch itself being insoluble; the morsel is then carried backwards by the action of the tongue, and by an involuntary act passes down the gullet into the stomach, where it is acted on by the acid secretion of that organ, the effect of which is to dissolve the albuminous portion of the food. The gastric juice, or acid secretion of the stomach, is the principal agent in the process of digestion; it is poured out more abundantly when pepper, salt, and other soluble stimulants are taken with the food; and hence the use of such substances as condiments: it consists of free hydrochloric, or lactic acid, and an animal substance termed *pepsine*, which is supposed to act as a kind of ferment, and is prescribed in indigestion by many physicians of the present day, being obtained as a yellowish white powder for that purpose from the stomach of the pig. The quantity of gastric juice secreted is only sufficient for the wants of the system, so that if more food be eaten than is necessary, only a *certain* portion is acted upon by the secreted gastric fluid, the remainder soon giving rise to pain in the chest, nausea, eructations, and all the symptoms of indigestion. The action of the gastric fluid is assisted by the minute division, tenderness, and moisture of the food presented to its action. Hence we see that persons greatly injure their health by "bolting" their food, as men of business too often do; the stomach then has nearly all the work of the salivary glands to do, besides performing its own arduous functions, and more food is swallowed by this mechanical and hurried way of eating than is necessary for the demands of the organism, so that it must of necessity lie for some time in the stomach in a half-digested state, giving rise to many morbid symptoms, and laying the foundation for future disease of a more permanent character. Between each meal sufficient time must be allowed for the food to become dissolved and absorbed into the blood. The late Mr. Abernethy was in the habit of advising his patients to allow six hours to elapse between their several meals; but an ordinary meal is usually digested in three or four hours. To keep the digestive organs in a healthy state, a certain amount of exercise in the open air is very necessary, which we shall have to consider hereafter; the state of mind, too, has a powerful influence over this important process, and must be brought as much as possible under moral discipline.

The *starchy* portion of the food then having been converted into sugar, and rendered soluble by the agency of the salivary fluid; and the *albuminous* portion having been dissolved to a certain extent by the gastric fluid, and absorbed into the blood, the remaining constituents pass into the intestines, where they are acted on by the secretion of two glands, the pancreas (sweetbread) and the liver: the pancreas has the same structure as the salivary glands, and performs the same function of turning starch into sugar; but besides this office it is called upon to form an emulsion of the fatty constituents, and to render them capable of absorption. Some physiologists attribute a third function to this gland—viz., that of dissolving albuminous matters; but this is at present a disputed point in physiological science.

The liver secretes bile, and is often blamed by patients—and I am afraid by some medical men also—for causing biliousness, when, in truth, the stomach rather than the liver is at fault; for where a person vomits for any length of time from any cause whatever—such as sea-sickness, after puking for some time the vomit becomes tinged with bile which has passed from the intestines into the stomach, and thence through the gullet and mouth; and thus the liver is unjustly blamed for an over secretion of its natural fluid, whereas the fault lies with the stomach and intestines, which have taken on a backward action.

The liver has the following functions to perform:—(1) to assist the pancreas in forming fat into an emulsion; (2) to prevent the decomposition of the food in its passage through the intestines; (3) to neutralise the acidity of the gastric juice; (4) to act as a natural purgative, and to give the healthy, yellowish-brown colour to the fæces;

(5) to convert albuminose (which is a low form of albumen) into such a form as to be capable of absorption into the blood; (6) to convert starch into dextrine, so as to fit it for respiratory purposes; and besides these various functions, the liver forms a saccharine substance called *glycogen*, which is consumed in the process of respiration; an excessive formation of this substance by this gland constituting the malady termed diabetes, or saccharine urine. After being subjected to the united action of these two glands, all the nutritive matter being already assimilated, the food passes on, fluid being still absorbed, to the lower part of the bowels, and having become dried and more solid, is finally discharged as an excrement.

RESPIRATION AND AIR.

The function of respiration, if not more so, is equally as important as that of digestion; for if the entrance of air into the lungs be prevented for the space of only three or four minutes, life is at an end, as seen in cases of drowning, hanging, and spasmodic disease of the larynx, to which is entrusted the power of speech, and which acts as the doorway to the lungs, and has, therefore, been called by Dr. Watson the *janua vitæ.*

As the blood passes through the system, bathing the various organs and structures of which it is composed, it becomes materially altered in quality, its nutritive portion having been absorbed or taken up, and the refuse part of the several tissues having been added, it must therefore undergo some purification before being again able to supply the wants of the body; and this process of purification takes place in the lungs.

The quantity of air changed by each act of respiration is variously estimated by different observers; but the average amount may be stated to be from twenty to twenty-five cubic inches.

Scientific writers make use of the term *vital capacity* to express the quantity of air a person can expel from his lungs after making the deepest possible inspiration; and Dr. Hutchinson has, by means of the spirometer, which is an instrument for measuring the volume of air expired from the lungs, turned this to account in the diagnosis of pulmonary consumption. He found that a healthy man, five feet seven inches to five feet eight inches in height, should be able, by a forced expiration, to expel 230 cubic inches of air from his lungs; while in the first stage of consumption he is able to expel 154 cubic inches; in the second, 131; and in the last stage of that fearful malady, only 108 cubic inches. The vital capacity varies according to the *height*, *weight*, and *age* of the individual; it is found, as previously mentioned, that a healthy person, five feet seven inches in height, can, by forced expiration, expel 230 cubic inches of air from his lungs, and that for every inch of height above this standard, there is a corresponding increase of eight cubic inches in the vital capacity. The influence of weight is less perceptible, and ceases to act altogether under 11½ stones; but for every additional pound in weight above the 161 pounds, there is a decrease of one cubic inch in the vital capacity up to 14 stones. It increases at the rate of 5 cubic inches per year, between the ages of fifteen and thirty-five, and decreases 1½ cubic inch per annum between the respective ages of thirty-five and sixty-five; thus a healthy middle-aged, tall, and well-proportioned man would have the greatest vital capacity.

The expired air has undergone the following changes by respiration:—(α) it is warmer, its temperature averaging now from 97° to 99½°; (β) it contains more carbonic acid, and the process of exhalation of carbonic acid is affected by many circumstances, such as age, sex, temperature, food, exercise, sleep, and especially by the purity of the external atmosphere; for it is found that however often air may be respired, it never contains more than ten per cent. of this gas, which is so pernicious to animal life, and therefore the further extrication of carbonic acid gas from the lungs is effectually prevented by the previous existence of a certain amount of this gas in the atmosphere: from this plain fact we see the importance of a constant supply of fresh air, and free ventilation, and the necessary evil of overcrowding. This pregnant source of disease is studiously avoided in our larger institutions; for we find on inquiry that in the wards of the hospitals attached to University College and King's College, London, each patient is allowed from 1,100 to 1,500 cubic feet of space. (γ) The air that has been respired contains less oxygen, a certain proportion of this gas having been absorbed by the blood to combine with the carbon, phosphorus, and sulphur of the effete tissues, and to be again expelled from the system in the form of carbonic, phosphoric, and sulphuric acids. (δ) The expired air contains more watery vapour than it did previously to inspiration.

The process of respiration as carried on in the animal kingdom consists essentially, then, of the *absorption of oxygen* and the *exhalation of carbonic acid gas;* but on tracing the same function into the vegetable kingdom, we find these processes exactly reversed—plants exhaling oxygen and feeding on carbonic acid, except under special circumstances, as during the periods of germinating, flowering, fruiting, and seeding, when they, in common with animals, give out carbonic acid. By these compensating actions of the animal and vegetable kingdoms the health of living beings is amply provided for. We see now the use of our open squares in the densely populated parts of our large cities, providing not only free space for breathing and healthy exercise, but also trees, shrubs, and herbs, to shed forth their acceptable oxygen, to refresh the weary frame of many a city man, woman, and squalid child. This may again be exemplified in the culture of aquaria, it being generally known that fishes cannot live for any length of time if there be no plants growing in the fluid in which they live, unless the supply of water is constantly changed; but if the fishes and plants be nicely adjusted, by this compensating action daily going on between animal and vegetable life, the water in the aquarium needs changing very seldom. The author has watched with great interest an aquarium healthily carried on for a long space of time under the combined influence of animal and vegetable respiration—the oxygen of the anacharis alsinastrum, alisma plantago (great water plantain), sagittaria sagittifolia (arrowhead), and other plants, and the carbonic acid of gold, silver, and other fishes, contributing their separate and compensating shares to the preservation of the healthy state and appearance of this little watery universe.

By respiration the blood is changed from the dark purple, or modena of venous blood, to the bright scarlet hue of arterial; it becomes 1° or 2° warmer, and contains more oxygen, but less carbonic acid, and nitrogen.

This function of respiration is, then, a very important one, and many deaths annually occur from disease of the lungs, and consequent impairment of the performance of this process, as we shall see under the head of diseases of the chest. Not only is life shortened by disease in the lungs themselves, but the lung affection soon comes to involve other vital organs in mischief, as the heart, kidneys, and veins; and has frequently to be acknowledged as the cause of general dropsy and an early death.

ANIMAL HEAT.

Associated with the process of respiration is the production of animal heat, which is essential to the well-being of all warm-blooded animals; the average temperature in Mammalia ranges from 97° to 103°; it is highest in birds of rapid flight, reaching 100° in the gull, and 112° in the swallow. The mean temperature of man is about 100°, but in many cases of febrile disease it rises as high as 105°, or 106°, as in scarlet and typhus fevers, while in cholera and infantile heart disease it sinks as low as 77°. The temperature of the human body falls as the parts are further removed from the centre: thus the foot is cooler than the thigh, the thigh than the loins, and the loins are cooler than the armpit. It falls one or two degrees during sleep, but rises again during the active exercise of the day; mental exercise and food also share some power of raising it.

As warm-blooded animals have the power of maintaining their bodies at a uniform degree of heat, so the cold-blooded animals can endure much greater variations in temperature; fishes and frogs may have their limbs made quite brittle by the action of frost, and still recover on being thawed. The power of generating heat is less in young and old persons, and hence the necessity of clothing and other means of artificial warmth in proportion. In those species which are able to move about from the first hour of their birth the temperature is steadily maintained, but in Mammalia the young are often born blind, and perfectly helpless, and then artificial heat is very necessary: thus the temperature of new-born puppies when removed from the mother soon falls one or two degrees. In the case of the human infant, which, although not born blind, is perfectly helpless for a long period, artificial heat is very necessary, especially in the case of children who are born before arriving at maturity.

Animal heat depends principally upon the oxidation of carbon, and the formation of carbonic acid, and is consequently produced in proportion to the activity of the function of respiration. During sleep, hybernation, and periods of inactivity, the respiratory process is inactively carried on, but little carbonic acid formed, and the temperature of the body low. The temperature of the body, besides being due to the formation of carbonic acid, is maintained to a certain degree by the oxidation of phosphorus and sulphur, and the formation of phosphoric and sulphuric acids, as well as by the contraction of the muscles during active exercise. During the last few months the thermometer has been used to assist in the diagnosis of many diseases, and Dr. Ringer has shown that it is of great service in discriminating consumption in its earliest stage; but this subject will be referred to from time to time while considering the exanthemata and inflammatory diseases.

EXERCISE.

To preserve the system in a state of health active exercise must be daily had recourse to, to assist the circulation of the blood, the function of respiration, and all the other vital processes carried on in the living body. By labour or exercise the appetite is increased, and the process of digestion more efficiently performed, and the skin and other excretory organs brought into greater activity. During the last few years healthy exercise has been much more appreciated, and at the present time public gymnasiums are being formed in various places. If any organ in the body be allowed to lead an indolent life its health soon suffers; when a limb is paralysed, not only is it deprived of nervous influence, but it wastes and becomes atrophied, and its muscles grow flabby and small; this may be seen to advantage by comparing the firm muscles of the acrobat, or pugilist, with those of the man whose brain more than his muscles is called into action in earning his livelihood. A sedentary life is attended by all kinds of diseases, as piles, jaundice, gall stones, lowness of spirits, apoplexy, &c.

There are various kinds of exercises; the body may be brought into action by walking, riding on horseback, or by gymnastics; of these walking is to be preferred, and the author considers that he has not given due attention to the wants of his body unless he has taken a walk of three or four miles during the day; and while on this subject all parents should be reminded of the pleasant recreation to be gained in the pursuit of natural history, for excursions into the woody districts in search of those wild flowers which delight in shade and retirement, and the journeys by winding streams in search of water plants, ensure a healthy amount of exercise, and a liberal supply of fresh air for the young naturalist, which the abstract sciences do not afford.

CLOTHING.

When on the subjects of respiration and animal heat, those circumstances influencing the maintenance of the body at a uniform temperature were duly mentioned; thus we found young persons and those advanced in years were not so able to keep up the temperature of their bodies as those in the middle period of life, and therefore the clothing must be proportionately warmer during these periods; on no account should any person, of any age whatever, consider his wardrobe complete without a good supply of flannel clothing to be worn next the skin, for this material keeps the body warm, and at the same time absorbs all superfluous perspiration; by its use many cases of rheumatism might be avoided, and many a cold prevented. It should be worn at all seasons of the year during the day time, but always taken off at night, that its benefit may be felt again on rising in the morning, and that it may be well aired, and again fit for the body's use. The celebrated surgeon John Hunter used to say, to rear healthy children there must be "plenty of milk, plenty of sleep, and plenty of flannel," and many cases of infantile disease may be traced to the lack of one or more of these circumstances.

SLEEP.

After the toil of every-day life a certain amount of rest is necessary for persons in every station of life, the labourer needing rest for his weary limbs, and the literary man repose for his hard-worked brain. The demand for sleep is greater in children than in adults, and if neglected soon leads to an undermined state of health. The number of hours required for sleep ranges from six to eight, a strong man requires only six, but a weakly person eight or ten hours. A bed so soft as to completely envelope the body is injurious to health; it should be moderately hard, and clothing should be used in sufficient quantity only to keep up the natural temperature of the body.

DISEASES OF THE EYE.

(1.) Near Sight. (*Myopia.*)

This affection is due to the refractive power of the eye being increased, and is caused by the convexity of the eye being too great, or by the refracting lens being drawn too far forward by means of a few fibres, called by Dr. Todd and Mr. Bowman the ciliary muscle of the eye. In this disease the image of objects is formed at some distance anterior to the retina, or expansion of the optic nerve, therefore the refractive power must be reduced, and this may be done by the use of double concave glasses; and in the choice of spectacles we wish to give our readers a little practical advice. On no account should a *single glass be worn, no lens* must be put before the eye which strains it, and when double concave glasses are worn there should be no decrease in the apparent size of objects looked at. As the eye becomes more flattened by age short-sighted persons gain the power of adapting their eyes to vision at different distances, and in their later years are often able to see without the assistance of double convex glasses, *i.e.*, they do not become sufferers from the following affection.

(2.) LONGSIGHTEDNESS. (*Presbyopia.*)

As a person advances in years the refracting power of the eye grows less, so that objects seen clearly are placed at some distance from the eye; this is called presbyopia, or longsightedness, and as myopia is the defective sight of youth, so presbyopia is the defective sight of old age. This disease must be treated by the use of double convex glasses, which must not be had recourse to till absolutely necessary, they should then be of the longest focus, and should on no account produce any apparent enlargement of the object. Should the eyes be weak as well as farsighted, they may be materially relieved by wearing glasses of a neutral tint. If spectacles of too high a power be used, the organs of vision soon experience a strained feeling, but, the eyes adapting themselves to the glasses, this soon passes away, and thus the eyes of a person of fifty may be soon made like those of a person twelve or thirteen years older.

(3.) OPHTHALMIA, OR INFLAMMATION OF THE EYES.

Catarrhal ophthalmia consists essentially in inflammation of the mucous membrane lining the inner surface of the eyelids, and covering the anterior part of the globe of the eyes; it is a very common disorder, and is caused by exposure to cold, and wet, and drafts, or currents of air. It begins in that part of the membrane lining the lids, and gradually extends itself to that part reflected over the surface of the globe of the eye; the eye is red, painful and uneasy, and there is an opaque yellow discharge, resembling pus, or a transparent and viscid secretion like mucus. If we examine more carefully an eye affected with this disease, we notice that the redness is quite superficial, that it is of a bright scarlet colour, and due to dilated and tortuous blood-vessels which lie upon the surface, and movable under the pressure of the finger, presenting a remarkable contrast to the appearances presented by inflammation more deeply seated, the colour of the vessels being then pink, and they are seen as delicate, straight, radiating lines. The pain in this disease is slight, and has not the throbbing character of other inflammatory affections of the deeper tissues of this delicate organ, but there is a feeling of stiffness and dryness, as if a particle of gravel were irritating the tender surface, and frequently the surgeon experiences some difficulty in persuading the patient to the contrary; there is little or no intolerance of light.

Treatment.—All sources of cold must be avoided, especially draughts and currents of air, the bowels should be freely acted on by 15 or 20 grains of powdered jalap, and the skin kept freely perspiring by persevering in this medicine during the day:—

Take of Solution of acetate of ammonia, 20 drops.
Sweet spirits of nitre, 15 drops.
Water, 1 ounce.

Mix thoroughly, and let the dose be repeated every four hours. At bedtime the feet should be put into hot water, and 5 to 10 grains of Dover's powder should be taken in a basin of hot gruel. The following lotion should be constantly applied cold to the irritated organ:—

Take of Goulard's extract, ½ drachm.
Distilled water, ½ pint

Many surgeons place great faith in a lotion containing 4 grains of caustic to 1 ounce of distilled water in the treatment of this disease. The sticking together of the lids may be effectually prevented by smearing them gently at night with a little lard or cold cream.

(4.) PURULENT OPHTHALMIA.

This is another disease affecting the membrane lining the eyelids, and covering the anterior part of the globe of the eye; it is accompanied by a profuse discharge of puriform matter, and hence its name; it occurs in two forms, (1) in the adult, as Egyptian ophthalmia, and (2) in newly-born infants as ophthalmia neonatorum.

(1.) *Egyptian Ophthalmia.*—Although this consists of inflammation of precisely the same part as in catarrhal ophthalmia, yet it is much more intense, and much more dangerous, in many cases leading to rapid and irreparable damage to the organ of vision, especially in cases of a specific nature; the surface of the eye is highly vascular, there is a profuse discharge of puriform matter running in gushes from the eyes, and trickling down the cheeks leads to their excoriation, fluid becomes effused between the membrane lining the eyelids and the lids themselves, so that they are stiff, thick, and convex, hiding the globe of the eye from view, their inner surface being intensely vascular. In a large proportion of cases the inflammatory action extends to the deeper tissues, and may cause ulceration and sloughing of the eyeball, and consequent evacuation of some of its refracting media. The eyelids are sometimes left by this disease in a roughened and granular state, causing great irritation to the surface of the eye, and forming a fertile cause for future inflammatory attacks. The pain in this disease resembles that of catarrhal ophthalmia, being of a scalding character like that due to a particle of sand or gravel irritating the organ; but should the disease extend to the deeper tissues, we have then a sharp, throbbing, lancinating pain round the eye, extending to the temple, and forehead, and coming on in paroxysms at night; there is no intolerance of light, while the superficial textures only are involved. This affection is common in tropical climates, in India, Egypt, and Persia, and is very contagious, as proved by its rapid diffusion among our troops on foreign service; and Dr. Watson, in his work on medicine, maintains that it may be conveyed for a short distance through the air.

In Egypt it is caused by the glaring light of the sun, and the frequent contact of sand, which is constantly diffused through the air and blown about by the wind. Anything setting up great irritation in this delicate organ may give rise to this affection, such as a severe blow, or the presence of small particles of lime. Sometimes it may be traced to living in an impure atmosphere, and especially in places very thickly crowded, and thus we find it amongst our soldiers and in schools and workhouses. This disease is frequently met with on board slave-ships, both from the imperfect ventilation and the neglect of cleanliness which must necessarily be present in such cases. As previously stated, this inflammatory affection of the eye is attended with much danger; for in many cases this delicate organ has been destroyed in the course of a few hours, so that no time should be lost in seeking the advice of the family medical man; and even if the sight be not entirely destroyed, it will be much impaired if the disease is not actively treated in its earliest stage. Egyptian ophthalmia usually begins in the delicate membrane lining the eyelids, and gradually extends over the whole globe of the eye; it is most frequently seen in both eyes at the same time.

(2.) *Purulent Ophthalmia occurring in infants*, or ophthalmia neonatorum, is a very common disorder, and easy of cure if brought early under treatment. It commences generally about the third day after birth, and begins in the membrane lining the lids, gradually extending over the surface of the eyeball; the eyelids swell, and become thick and convex, and their inner surface red and villous; a copious discharge of pus forms, and runs in streams from the eye when opened by the nurse or medical attendant, the child knits its brow, and studiously avoids the light. This disease is usually neglected, the nurse and friends contenting themselves under the idea that the child has a "cold in the eye," and frequently when the little patient comes into the hands of the surgeon the eye is already dull and hazy, and vision partially lost. This affection may be caused by the admission of cold air, and especially draughts, into the tender eyes of the newly-born offspring; more frequently it may be attributed to the eyes of the infant having come into contact with some unhealthy discharge from the passages of the mother during its birth, such as the discharge of whites or venereal disease. In some few instances it has been caused by the nurse bathing the child's head with gin, and allowing some of the spirituous liquor to find its way into the eye, and in others by the presence of soap.

Treatment.—Both forms of this disease require nearly the same method of treatment for their cure: bleeding is not required, but one or two leeches placed on the temples will do good should the inflammation run high. The eye must be well washed out with a solution of alum every morning, containing one drachm of this salt dissolved in a pint of pure water; then the following drops should be dropped in by means of a quill pen:—

Take of Nitrate of silver, 10 grains.
Distilled water, 2 ounces.

Mr. Guthrie uses in the treatment of this disease an ointment containing ten grains of caustic (nitrate of silver) to one drachm of hog's lard, a small piece of which may be inserted into the eye once or twice during the day. Pain may be relieved by warm fomentations, and sleep procured by the administration of this pill at bedtime:—

Take of Compound soap pill, 5 grains.

The lids should be smeared at bedtime with a little spermaceti ointment to prevent their sticking together.

Purulent ophthalmia of infants must be treated thus: the lids being gently separated, a few drops of the following lotion are to be dropped into the eye every morning to clear it:—

Take of Alum, 8 grains.
Pure water, 2 ounces.

Then a few drops of a lotion containing four grains of caustic to one ounce of distilled water should be dropped in; the bowels must be regulated by the exhibition of castor oil, or other gentle aperients. Under this plan of treatment the disease will soon be cut short, and the child restored to perfect vision.

(5.) Strumous Ophthalmia.

Is a low form of inflammation attacking the eyes of children of the scrofulous diathesis, usually between the period of weaning and the tenth year. The leading symptoms are, slight and partial redness, little bundles of vessels running from the angles of the eyes towards the cornea or anterior part of the globe, and ending in little phlyctenulæ or pustules. Both eyes are affected, there is great intolerance of light, and a copious discharge of tears runs down, and frets the cheeks. The little pimples or pustules which are peculiar to this disease may be absorbed and leave a temporary white stain, or break and form small ulcers.

Treatment.—General treatment will be found more useful than local: the patient should avoid the light, and take the following medicine three times a day:—

Take of Sulphate of iron, 2 grains.
Sulphate of quinine, 3 grains.
Dilute sulphuric acid, 10 drops.
Distilled water, 1 ounce.

Mix, and let one teaspoonful be taken twice a day.

(This prescription is intended for a child two or three years of age, and must be varied in strength according to the patient's age.)

Take of cod liver oil, 1 or 2 drachms, twice a day.

A blister must be placed behind the ear of the affected side, and the eyes kept wet with this lotion.

Take of Goulard's extract, ½ drachm.
Distilled water, ½ pint.

The action of the bowels is to be regulated by the use of purgatives, the body must be warmly clad, and the patient must take plenty of exercise in the fresh air, and live well. Many persons subject to this disease have found relief by wearing rings in their ears as counter-irritants.

(6.) INFLAMMATION OF THE IRIS (*Iritis*).

The iris is that part of the eye which surrounds the pupil, and which gives it its colour, in some persons being blue or grey, in others dark brown or black; it is composed of muscular fibres, and serves to contract or dilate the pupil, and to regulate the quantity of light admitted into the several chambers of this organ. On looking at the eye, fine, delicate, hair-like vessels of a pink colour are seen radiating from the cornea or anterior part of the globe. The colour of the iris itself is altered from blue to green, or from black to red, and it is often adherent to the parts behind; the pupil is irregular, immoveable, and in many cases completely plugged by the products of the inflammatory process; there is dimness of sight, and the whole eye looks dull, hazy, and opaque. Pain surrounds the eye, and is of a throbbing, pulsating, lancinating character, coming on in paroxysms at night. This affection may be readily distinguished from the previous ones by the above symptoms, especially by the delicate, hair-like, straight, radiating vessels of a pink colour, and the peculiar plunging character of the pain, and its nocturnal paroxysms.

Causes.—Exposure to cold and wet, overwork, rheumatism, and mechanical or surgical injuries.

Treatment.—The pupil of the eye must be kept well dilated by smearing the extract of belladonna around the eye upon the lids, brow, and forehead, or by dropping a little of the following preparation into the eye:—

Take of Atropine, 2 grains.
Rectified spirits of wine, 1 drachm.
Distilled water, 7 drachms.

The atropine solution is much to be preferred, as it is less irritating, and it is used by all surgeons of the present day; the patient should take one of these pills twice or three times a day till his gums become tender:—

Take of Calomel, 2 grains.
Powdered opium, ½ grain.
Mucilage, a few drops.

In certain other cases, the following dose may be taken three times a day with advantage:—

Take of Iodide of potassium, 3 grains.
Bicarbonate of potash, 4 grains.
Water, 1 ounce.

(7.) AMAUROSIS, OR "GUTTA SERENA."

By this term is meant a diminution or total loss of sight, due to disease of the retina or membranous expansion of the optic nerve at the posterior part of the eye; by older writers it is termed "Gutta Serena." Amaurosis is a very obscure disease, and may be caused by many various conditions of the brain or nerve of vision; it may be due to simple inflammation of the retina, tumours pressing upon the nervous substance of the brain or optic nerve, or an anæmic state of the eye. It is often met with in cases of poisoning and long continued drains on the system, and is sometimes seen in cases of hysteria and in constitutions irritated by teething.

On looking into the eye it has the appearance of health to the inexperienced, being bright and clear, but the movements of the pupil are very sluggish, or it is permanently dilated; the patient complains in its earlier stages of specks flying before the eyes, and has a peculiar gait and countenance. There is an uncertainty about his movements, the eyelids are wide open, and he has a vacant, unmeaning stare, which is not noticed in cases of cataract or opacity of the refractive lens, but patients suffering from the latter disease look about and seem as if the power of sight were still left in the retina, although the exciting agent light is denied. The specks seen moving before the eyes are technically called "Muscæ Volitantes;" their appearance, however, does not show that amaurosis is present in every case, but those specks which denote permanent disease in the organ of vision are motionless when the eye is at rest, but move with it when in motion, while those which portend no danger to the anxious invalid present a fringed appearance, and sink gently downwards when the eye is fixed, being, in all probability, caused by particles of mucus floating in one or other of the refracting media of this delicate organ.

Treatment.—Before prescribing active remedies or measures in this disease, we must first try to find out its exciting cause, and then if possible to remove it. Thus, if the impaired vision be due to *inflammation*, we must have recourse to the remedies which alleviate that condition, especially the moderate use of mercury, which may be given either in the form of blue pill or calomel:—

Take of Blue pill, 12 grains.
Extract of henbane, 8 grains.

Mix, and make four pills, one of which must be taken twice a day.

Or, Take of Calomel, 24 grains.
Powdered opium, 6 grains.
Mucilage of gum arabic,

sufficient to make up twelve pills, and let one be taken twice or three *times a day.*

Three or four leeches must be placed on either temple, and the bowels freely acted on by this draught, which must be repeated occasionally as required:—

Take of Epsom salts, 3 drachms.
Compound tincture of senna, 2 drachms.
Water, 1½ ounce.

Mix, and give it early in the morning.

If due to *vascular exhaustion*, the system must be kept up by the use of tonics, bark, nourishing diet, and the use of the following medicine:—

Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 10 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and take a sixth part every six hours.

Of course little or nothing can be done towards curing this affection when it depends upon permanent disease of the brain, or nerve of sight. When due to *poisoning*, the proper antidotes must be promptly given, and *hysteria*, *intestinal worms*, and *teething* must be met by their appropriate remedies.

DISEASES OF THE NERVOUS SYSTEM.

(1.) INFLAMMATION OF THE BRAIN, OR ENCEPHALITIS.

Acute inflammation of the brain may commence in one of three ways: it may be ushered in by active delirium and high fever, by nausea and obstinate vomiting, or by an attack of general convulsions. It may be divided into two periods, each having its peculiar symptoms; the first period is that of *excitement*, the functions of the brain being morbidly acute; there is pain in the head extending across the forehead, the temples throb, the face is flushed, the eyes injected, and the senses of sight and hearing morbidly high, the sufferer being unable to bear the slightest light or noise; there is violent delirium, a dry parched skin, frequent and hard pulse, white tongue, constipation, and nausea, and vomiting. After the continuance of these symptoms for one, two, or more days, the second period, or the period of *collapse*, sets in; there is now no longer any headache, the patient is stupid, vision and hearing are, from being morbidly acute, become dull and perverted, the pupil is dilated, and squinting and double vision are frequently noticed, the countenance becomes ghastly, and is bathed in cold perspiration, the sphincter muscle guarding the outlet of the alimentary canal relaxes, and fæces are passed involuntarily, the coma grows deeper and deeper, and death soon terminates the scene.

Causes.—This disease, which runs so rapid a course, may owe its origin to several different circumstances: it may be due to exposure to the heat of the sun, or to blows on the head, or it may be caused by the deposition of tubercular or puriform matter in or about the nervous substance of the affected organ.

Treatment.—This disease needs early and active treatment, and if neglected in its first stage, no hopes will be left to the friends of the unconscious patient; bleeding should be practised as soon as the nature of the disease is fairly made out, blood being taken from the arm until the sufferer begins to show signs of faintness. The sick-room must be darkened and kept perfectly quiet, the head should be placed on a firm pillow and somewhat elevated, and after being deprived of its hair must be kept cool by the constant application of an indiarubber bag containing pounded ice. The bowels must be freely acted upon by an active purgative, and the following will be found a very convenient and useful form of medicine for this purpose:—

Take of Croton oil, 2 or 3 drops.
Bread crumbs sufficient to make up 4 pills;

one of which may be given when necessary.

Most physicians agree that mercury is inadmissible as a remedy in this disease. Should the inflammatory process going on in the substance of the brain assume a more chronic form, blisters may be placed upon the scalp, the nape of the neck, or behind the ears. When symptoms of exhaustion are making their approach, they must be counteracted by the free use of wine, beef tea, and ammonia, and the following draught should be given every two or three hours:—

Take of Sal volatile (compound spirits of ammonia), 20 drops.
Chloric æther, 10 drops.
Water, 1 ounce.

(2.) Delirium Tremens (*Drunkard's Brain Fever*).

Under the constant use or abuse of alcoholic drinks the system becomes reduced to a state of great weakness, and the nervous functions proportionately impaired, the limbs becoming unsteady, and the brain affected with a peculiar delirium. Some care is required in the diagnosis of this affection, for if mistaken, as it easily may be by the unwary or inexperienced, for inflammation of the brain, or its investing membranes, serious results will happen, for the active treatment previously described as necessary in the latter disease acts as a deadly poison or fatal blow in the delirium of drunkards, for as the one requires the strictest antiphlogistic treatment and regimen, so the other requires a stimulating plan of cure and a nutritious diet.

This disease consists essentially of nervous irritation, being characterised by watchfulness, a pale face, injected eyes, tremors of the limbs, a rapid pulse, and copious perspirations of an acid and offensive odour. The patient has, in all probability, been an habitual *drunkard, and may* have been deprived of his accustomed stimulus previously to his present attack, or it may have followed hard upon a week of debauchery. Delirium tremens may be distinguished from inflammation of the brain by attending to the following points; in the latter we have a dry skin, fixed pain in the head, palsy, convulsions, inequality of the pupils, and squinting; while in the former we have the skin bathed in perspiration, the tongue moist, and no symptoms indicative of an inflammatory attack upon the brain. In delirium tremens Dr. Bence Jones has shown that the urine contains less than the normal amount of phosphates, this being reversed when the brain is inflamed; the use of the thermometer too will lend us aid in making out the presence or not of this painfully interesting affection, for the temperature of the body has been found to remain unaltered in delirium tremens, but to be much heightened in persons suffering from inflammation within the cranium. The delirium of drunkards is of a peculiar character, and quite characteristic of the disease; it is a *busy* delirium, the invalid talks a great deal, and there is an odd mixture of the real and the ideal in his thoughts and expressions; he is very suspicious, and constantly imagining that some enemy is present, or that some evil-disposed person is trying to take away his means of livelihood. Dr. Watson, in his admirable work on the "Practice of Physic," describes this delirium in these words: "If you question the patient about his disease, he answers quite to the purpose; describes, in an agitated manner, his feelings, puts out his tongue, and does whatever you bid him; but immediately afterwards he is wandering from the scene around him to some other that exists only in his imagination. Generally his thoughts appear to be distressful and anxious, he is giving orders that relate to his business to persons who are absent, or he is devising plans to escape from some imaginary enemy. He is haunted by ocular spectra, fancies that rats, mice, or other reptiles, are running over his bed; sees spiders crawling on the ceiling, or a horse's head thrust through the walls of his room. He addresses remarks to strangers whom he erroneously believes to be present. He looks suspiciously behind the curtain or under his pillow, and he is perpetually wanting to get out of bed; but he is readily induced to lie down again. It is very seldom that he meditates harm, either to himself or to others; there is rather a mixture of cowardice and dread with the delirium." This disease is not so frequent among women as among men.

Causes.—The most frequent cause of delirium tremens is the abuse of drink, distilled spirits causing it sooner than wine, and wine sooner than beer. It may be due to the habitual use of opium, or long-continued mental anxiety; thus it is met with in men of business and speculation, and in the overworked student. Habitual drunkards are frequently attacked with it when confined to bed by illness or accident. The author has lately had under his care one case following a broken thigh, and another a fractured leg.

Treatment.—Up to the last few years this disease was looked upon as of an inflammatory nature, and treated accordingly; but this error was corrected by Dr. Thomas Sutton, who published his views on the subject in 1813. It has been treated on three plans, (1) the antiphlogistic, which was very unsuccessful, (2) the eliminative, and (3) the narcotic, or opium plan of treatment, which is used at the present time, and found very satisfactory. Good nursing is an absolute necessity in this disease, the patient must be carefully watched that he does no harm to himself or others, there should be perfect quietude, and so far as practicable no restraint; in no case should the attendant struggle with the invalid, as he may be generally managed by kind words and discipline, and many cases are on record in which sudden death has carried off the patient previously exhausted by muscular exertion. Food and sleep are the two things necessary for the cure; during the day the patient should be placed in a darkened room, and carefully watched; nourishing and light food may be given him, and a small amount of his usual stimulus allowed, a full dose of opium in some form must be given at night, and repeated if necessary at various intervals during the day, under the hope of giving him rest, calming his irritated mind, and composing his weary body, and that he may be roused from sleep with an abatement of all his symptoms, and a lively recollection that it is his own folly and degraded habits which have rendered him thus vacant in mind and powerless in body.

Take of Tincture of opium (laudanum), 30 drops.
Pure water, 1 ounce.

Mix, and give it at bedtime, and repeat it if necessary once or twice during the day.

Some medical men prefer giving opium in the solid form, thus:—

Take of Powdered opium, 2 grains.
Sulphate of quinine, 3 grains.
Mucilage, sufficient.

Mix, and make one pill to be taken at bedtime, and to be repeated if necessary once or twice during the day.

In this pill the quinine is added to prevent the nausea which usually follows a narcotic dose of opium or any of its preparations. In some cases morphia may be prescribed with advantage.

Take of Hydrochlorate of morphia, ½ grain.
Confection of roses, 5 grains.

Mix, and make one pill to be taken at bedtime.

On waking from sleep a mutton chop may be allowed, and a little of his ordinary drink. During the last two or three years the tincture of digitalis has been much praised as a remedy in this disease in half-ounce doses, but most physicians look with suspicion upon this drug given in such large quantities, and thus administered it is certainly attended with a considerable amount of risk to the well-being of the patient.

(3.) Acute Hydrocephalus, or Scrofulous Inflammation of the Brain.

Simple inflammation of the brain is not often met with amongst young children, but that form of inflammation arising from the deposition of tubercle and scrofulous matter in the substance of the brain or its membranes is not unfrequently seen. It may invade the system in three ways; it may set in *gradually* after occasional pains in the head and stomach, or it may come on *suddenly* with acute pain in the head, flushed face, and injected eyes, with intolerance of light and sound, and some tenderness of the abdomen; in the third form of attack it supervenes upon some other disease, such as whooping cough, smallpox, measles, or scarlet fever.

The course of this disease is divided into two stages, the first being that of *increased sensibility*, in which there are pain in the head, intolerance of light and sound, vomiting, constipation, scanty and high coloured urine, and a frequent and sharp pulse. After these symptoms have continued from a few hours to several days, the period of *diminished sensibility* is ushered in by the appearance of a slow and irregular pulse; the pupils of the eyes soon begin to oscillate, and finally become much dilated, and there are squinting and double vision; vomiting has ceased, but convulsions and palsy now present themselves to terminate the life and misery of the little sufferer.

This affection of the brain may be distinguished from remittent or gastric fever of children by the following diagnostic characters. In the latter disease there is usually no vomiting, which is one of the most obstinate symptoms in the former. In gastric fever the bowels are relaxed and the abdomen tender; but in inflammation of the brain there is constipation, and no perceptible tenderness at the epigastrium or pit of the stomach. In remittent fever, as its name implies, there are distinct remissions and exacerbations of the various symptoms; but in inflammation of the brain these fluctuations are not met with. The temperature of the body as revealed by the thermometer is greatly elevated in remittent fever, but remains much the same during the progress of inflammation of the brain. In remittent fever the tongue becomes dry early, and the little child craves for drink, and in some few cases, although not so frequently seen in children as in adults, a rash, characteristic of this disease, may be seen in various parts of the body.

Treatment.—Blood should be locally abstracted by the application of four or five leeches to the crown of the head, and the bowels freely purged by the following powder, which is intended for a child three or four years old, and will require to be altered in strength according to the age of the little patient.

Take of Calomel, 18 grains.
Powdered scammony, 25 grains.

Mix, and divide into six powders, and give one as required in a little preserve or powdered loaf sugar.

The hair of the head must be shaved off, and the head kept cool by the constant application of linen cloths dipped in cold water, or of ice. Mercury should not be given in this disease, but when it assumes a more chronic form great advantage will be derived from the application of a blister to the nape of the neck, or the crown of the head. As this disease is so fatal, nearly all children affected with it falling victims to its deadly grasp, an experienced physician should be sought at once, and one if possible who has bestowed great care and attention upon the subject of diseases of children. From what has just been said, parents will perceive that the remedies above-mentioned are in many cases completely overcome by the deadly tendency of this fearful malady. Preventive treatment has met with a greater share of success in warding off the disease in those naturally predisposed to it. A mother who has already lost several children from scrofulous inflammation of the brain should not nurse her infants, but they should be brought up in the country, their diet consisting of pure milk; they should be allowed plenty of fresh air, and careful watching will be needed during teething. The bowels must be regulated by mild aperients, and such children as are predisposed to scrofula should be carefully protected from the contagion of scarlet fever, measles, and whooping cough.

(4.) DROPSY OF THE BRAIN, OR CHRONIC HYDROCEPHALUS.

As we have instances of dropsy of the chest and body, so may we have fluid collecting and accumulating within the bony walls of the skull, giving rise to a peculiar and characteristic conformation of the head; the forehead instead of receding juts out, and in many cases overhangs the brow, the head itself becomes long, broad, deep, and flattened on the top, all proportion being lost between it and the face. The pressure of the fluid upon so delicate an organ as the brain gives rise to various symptoms of nervous oppression; thus we get as a consequence of this anatomical condition, blindness, deafness, palsy, or idiotcy; the child is top-heavy, he walks with care, holding his unwieldy head in his hands, or places it upon the table as he sits.

Treatment.—As in the treatment of other forms of chronic dropsy, we must first try to disperse the fluid, but with much less hope of effecting our object. We must act on the kidneys and bowels by means of diuretic and purgative medicines; the quantity of water excreted by the kidneys may be increased by the administration of the following dose every six hours:—

Take of Acetate of potash, 3 grains.
Sweet spirits of nitre, 5 drops.
Pure water, 1 drachm.

(For a child of two or three years of age.)

The function of the bowels may be increased and assisted by the exhibition of the following powder occasionally :—

Take of Scammony powder, 5 grains.
Calomel, 2 grains.

(For a child three or four years old.)

But oftentimes we are unable to adopt this mode of treatment from the emaciation and debility or tender age of the patient, the symptoms of the disease and constitution of the child demanding support and nutriment; the invalid suffering from a chronic disease, pointing in all its phases to debility as its cause, must be placed on a liberal diet, and supplied with medicine containing some form of iron, either the sulphate or the ammonio-citrate.

Take of Sulphate of iron, 2 grains.
Sulphate of quinine, 3 grains.
Dilute sulphuric acid, 20 drops.
Pure water, 1½ ounce.

Mix, and let one teaspoonful be taken three times a day.
(For a child three years of age.)

Or, Take of Ammonio-citrate of iron, 12 grains.
Compound spirits of ammonia, ½ drachm.
Water, 1½ ounce.

One teaspoonful to be taken every four hours.

Mercury has been recommended by some practitioners, but great care and judgment are required in its use, for not only have we the cephalic dropsy to cure, but we have also to pamper and nurse up a scrofulous diathesis. Two mechanical remedies have been proposed, and in some instances have been successful; the one pressure by means of strapping and bandages, and the other tapping and evacuation of the offending fluid; the former is useful when the bones of the head are lax and movable, and, in pale and languid children, when the disease remains stationary, the latter has been had recourse to when the walls of the head were tight and firm, but of course it is a dangerous operation, seldom performed, and should then be done by some surgeon of renown and experience.

(5.) APOPLEXY.

This term is used to signify a peculiar form of nervous disease due to pressure upon the brain from various causes, marked by a sudden loss of sensation, thought, and voluntary motion.

There are three distinct forms of attack; in the first the patient is suddenly stricken down, deprived of sense and motion, he has a slow but full pulse, his breathing is stertorous, and he lies like a person in a deep sleep; the second form of attack sets in with acute pain in the head due to the giving way of a vessel in the brain, the patient is pale and faint, and troubled with nausea and vomiting; these symptoms are generally recovered from after a short space of time, but the headache does not cease, and in due time after blood has been poured out from the ruptured vessel upon or into the substance of the brain, the patient becomes heavy, stupid, drowsy, and forgetful, and sinks into a sleepy state, the apoplectic condition being fully arrived at, as in the previous form of this disease. When apoplexy commences in this way, the life of the patient is in great danger, for it usually proceeds to a fatal termination, a large quantity of blood being extravasated from the gaping vessel. In the third mode of attack there is a sudden loss of voluntary motion in the whole of one side, and the function of the nerves of sensation of that side becomes more or less impaired, varying in degree from mere tingling or numbness to perfect loss of feeling, but there is no loss of consciousness; the faculty of speech is impaired. This state of things may terminate in perfect recovery, in the limbs being permanently palsied, or may run into the apoplectic state described below. When the apoplectic state is fully formed, the patient is perfectly unconscious, he answers no questions, his pulse is slow and irregular, the act of inspiration is accompanied by snoring or stertor, and during expiration the cheeks are puffed out by the passage of air from the lungs; his countenance is livid, the pupils contracted, and the limbs powerless. The bowels are confined, but the urine flows away involuntarily.

Apoplexy is due to pressure on the brain as previously stated, and this may be the result of the effusion of some of the fluid part of the blood, or of blood itself. The third form, in which there is no loss of consciousness, is due to softening of the brain from disease of the arteries or inflammation.

Causes.—Apoplexy is transmitted from parent to offspring, it occurs in men of a peculiar build, in those who are short, stout, and thickset, with large heads, florid faces, and short, thick necks. It rarely happens before the age of thirty, and is most frequent between the ages of fifty and sixty. It may be brought on by a diseased state of other vital organs of the body, as the heart, lungs, and kidneys. Intemperance greatly favours its onset. Before the actual occurrence of an attack of apoplexy, people generally manifest premonitory symptoms of their liability to cerebral disease. They begin to suffer from headache, nausea, giddiness, retchings, eructations, their sense of sight and hearing becomes impaired, and there may be a slight attack of paralysis; there are complaints of numbness and drowsiness, and the disposition and habits are altered, the brave man becoming cowardly, and the wise man and the man of common sense foolish and hazardous.

Anything which increases the activity of the circulation may be an exciting cause of apoplexy; all kinds of violent exercise, as running, rowing, and horseback exercise must be avoided; there must be no obstruction to the free descent of the blood from the head, and a person by nature predisposed to this affection should not be allowed to strain or hold his breath as in playing on wind instruments. The course of the blood in the capillaries of the lung, and in the brain also, is retarded, or actually prevented by vomiting, laughing, coughing, and sneezing, and in this way many forms of lung disease predispose to this nervous affection. Violent emotion and the excitement of drunkenness must be avoided. An attack of apoplexy is sometimes brought on by certain postures of the body hindering the downward current of blood from the head, such as stooping and twisting the neck. A few months since the writer had under his care and treatment a man of apoplectic build, who had arisen in the morning from sleep apparently quite well after a good night's rest, but in the course of dressing, when stooping to pull on his boots, he suddenly fell back, having lost all power of sensation and voluntary motion in the whole of the left side of the body.

Apoplexy is more frequent in the colder than in the warmer seasons of the year for the following reasons: in the first place the cold atmosphere of winter drives the blood from the surface of the body, and leads to internal congestion; and secondly, chest disease in all its forms, and with all its symptoms, cough, difficulty of breathing, leading to venous congestion of the cerebral vessels, is more prevalent during the colder months.

Treatment.—Remove the patient into a cool and airy room, gently raise his head, and remove all articles of clothing preventing the free escape of blood from the head; if the patient be strong, young, healthy, vigorous, of full habit, and the pulse be full and hard, and if there be at the same time signs of plethora within the head, blood may be taken from the arm. In many cases blood-letting is contra-indicated, the patient being already well advanced in years and in a reduced state of health. In such cases we must either content ourselves in cupping the nape of the neck or in applying a few leeches to the head, or give up altogether the idea of abstracting blood, and must apply a blister to the back of the neck. When the invalid is not much reduced, great advantage will be derived from the action of an active purgative, and this ought to be given at once, if possible, in all cases: ten grains of calomel is a convenient form of medicine for this purpose, and may be readily placed upon the back of the tongue, or a drop of croton oil placed upon a small piece of loaf sugar may be sucked down by the patient. Should he be unable to swallow, strong, purgative, stimulating enemata may be thrown up the bowels. In those cases of loss of power over one side, with no loss of consciousness, which are due to softening of the brain, bleeding is unnecessary, but they require quietude and composure, a blister may be placed upon the back of the neck, the purgative treatment as previously described persevered in, and beef-tea, broth, toast, arrowroot, gruel, and tea given at short intervals. If the patient be faint and in a state of syncope, the following stimulating mixture may be given:—

Take of Carbonate of ammonia, 18 grains.
Pure water, 6 ounces.

Mix, and let a sixth part be taken every three or four hours.

Apoplexy occurring in aged people and debilitated subjects must be treated by stimulating medicine and nutritious food; a blister or seton may be applied to the back of the neck, and the bowels freely acted upon by a brisk purgative. Cold lotions applied to the head will often give great comfort to the feelings of the patient, and alleviate his symptoms. In the more chronic form of apoplexy, after the more acute stage of the disease has passed away, and the muscles in various parts of the body remain in a weak and palsied state, steel and quinine will often be found of great service, thus:—

Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 20 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix and give a sixth part three times a day.

Or, Take of Sulphate of quinine, 20 grains.
Tincture of muriate of iron, 1 drachm.
Dilute hydrochloric acid, ½ drachm.
Distilled water, 6 ounces.

Mix and let two tablespoonfuls be taken every six hours.

Some surgeons advise the use of mercury in this affection; but we must be very suspicious of its action, for in all cases of nervous disease this drug soon produces salivation; while on the contrary large doses of it may be given in yellow and continued fever without danger of any untoward results. This medicine acts more powerfully also on adults than children; and, as before stated, apoplexy is rare before the age of thirty, and the majority of cases happen between the ages of fifty and sixty, which is a period of life in which the blood must not be unnecessarily deprived of its nutrient qualities by the injudicious use of so powerful a drug as mercury. Galvanism to the affected muscles and the administration of strychnine internally will assist the palsied or weakened limbs in regaining their power of motion. Strychnine may be safely given, thus:—

Take of Strychnine, 1 grain.
Confection of roses, 1 drachm.

Mix thoroughly and make fifteen pills, and let one be taken every night and morning.

(6.) PALSY OF THE LOWER LIMBS, OR PARAPLEGIA.

In most cases of apoplexy which are recovered from, the arm and leg of one side remain in a state of weakness or palsy. This is called *hemiplegia*, and is due to some morbid condition affecting one-half of the brain, and that half on the side opposite to that on which the palsy has occurred. When the loss of power and feeling affects both legs, it is technically called *paraplegia*, and is usually due to *some morbid state*, not of the brain, but of the spinal marrow. This disease commences slowly and insidiously, but gradually progresses from a feeling of weakness and numbness in the legs to perfect loss of voluntary motion and sensation; the bladder and the bowels become paralysed, and the urine alkaline and irritating, and being passed involuntarily, frets those parts with which it is brought into contact; the bowels are either constipated or relieved without the patient's knowledge, which, added to the irritation set up by the alkaline urine, causes the skin thus previously inflamed, especially on the parts bearing the weight of the whole body, to grow red and slough, and to the formation of large bed sores, which frequently deprive the lingering patient of his last chance of recovery. Although the legs are no longer submissive to the influence of the will, yet they are frequently moved involuntarily, and by spasmodic twitchings. There is generally loss of feeling as well as that of motion.

Causes.—Paraplegia may be caused by the long-continued action of cold—many cases occurring after long immersion in cold water. As in the case of the brain, the functions of the spinal cord may be totally abolished by pressure of various kinds: thus, blood may be effused upon or into its substance; some portions of the spinal column may be dislocated, and press heavily upon it; tumours may be formed in the spinal canal, or it may suffer materially from the pressure of any or of all the products of the inflammatory process. As one form of apoplexy is due to the softening of the brain, so palsy of the lower extremities may be due to inflammatory softening of the spinal marrow. Intemperance and the impairment of the animal functions generally have great influence in the production of many cases of this kind, and therefore must be avoided as evils tending to weaken the mind, and to render the body powerless.

Treatment.—The treatment of this disease depends upon the morbid condition giving rise to it. In cases of malignant growths pressing upon the nervous substance of the spinal marrow, nothing can be done by medicine or surgery, except to support the strength of the patient and alleviate his sufferings. When due to inflammation, he should be kept in the horizontal posture, blood may be taken by cupping over the spine, or a seton may be inserted in that region. In many cases of this kind, great benefit is derived from the use of strychnia internally; it may be given thus:—

Take of Strychnine, 1 grain.
Confection of roses, 1 drachm.

Mix well, make fifteen pills—one to be taken every night and morning.

This drug is found more useful in treating diseases dependent upon a morbid condition of the spinal cord than of the brain. In all cases of palsy of the lower extremities, bed sores must be carefully guarded against; when the skin is reddened by the discharges above referred to it should be bathed with brandy, or covered with adhesive plaister, and the patient must be placed upon one of Arnott's water beds, or cushions. If the urine becomes much altered in character, as it too frequently does, the aid of the surgeon should be sought to draw it off, and to wash out the inflamed bladder once or twice during the day. The wasted muscles may be stimulated by galvanism when the disease is of long standing, and has assumed a more chronic form. Some persons, while suffering from this disease, have been benefited by a gentle course of mercury.

Take of Plummer's pill, 5 grains.

Make one pill, and let the dose be repeated twice a day. Others have derived benefit from iodide of potassium, given thus:—

Take of Iodide of potassium, 2 scruples.
Bicarbonate of potash, ½ drachm.
Pure water, 8 ounces.

Mix and take an eighth part three times a day. Stimulating liniments may be rubbed in along the course of the spine.

Take of Opodeldoc, 2 ounces.
Solution of ammonia, 2 drachms.

Mix thoroughly, and make a liniment to be rubbed in over the spine twice a day. Some physicians have recommended the use of the tincture of cantharides, thus:—

Take of Tincture of cantharides, ½ drachm.
Water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

(7.) Locked-Jaw, or Tetanus.

In this affection, the voluntary power, instead of being decreased or wholly lost, is perverted—the disease consisting of long-continued, violent, and painful contractions of the voluntary muscles in various parts of the body. It begins in the throat and neck: the muscles of these parts are stiff, and the head is turned and the jaws opened with difficulty. There is acute pain at the bottom of the chest, piercing through to the back just below the spade bones. The involuntary spasmodic contractions gradually extend to the muscles of the trunk, becoming greatly increased in intensity every ten minutes or quarter of an hour, and during these exacerbations, the patient's face shows a feeling of intense anxiety and pain: his brow is knit, face flushed, forehead wrinkled, his eyes are wide open and staring, his nostrils dilated, and the corners of his mouth retracted so as to involve the features in a grim smile, called the *risus sardonicus;* the contractions are sometimes so violent as to break the muscles or bones. The bowels are usually constipated, and there is no delirium.

Causes.—This disease is generally due to one of two causes—either *exposure to cold, or to* irritation set up in some part of the body which has been recently wounded; and in many cases, as borne out by the testimony of military surgeons, these two causes act together. In tropical climates it may come on of itself without any apparent cause, and is then called *idiopathic tetanus*. In this form it is less severe, and as such never occurs in this country. It is very frequently due to punctured wounds, and especially when situated in the sole of the foot, or the muscles forming the ball of the thumb.

This affection is very closely imitated by the symptoms of poisoning by strychnia, but may be thus distinguished:—In locked-jaw there is usually some wound in one or more of the extremities, and it comes on gradually, affecting first the muscles of the neck and throat; while strychnine affects the whole muscular system at once, and comes on more quickly, and proceeds more rapidly to a fatal termination.

Treatment.—Keep the patient perfectly quiet, and sustain his strength till the storm of spasmodic action be passed. Bleeding is not generally required, and purgatives by irritating the alimentary canal tend to excite the paroxysms. He must be well fed, being liberally supplied with wine and beef-tea; opium may be given in moderate doses at intervals in hopes of calming the excited nervous system. Belladonna and conium have been spoken favourably of as remedies in this disease, and may be given thus:—

Take of Tincture of belladonna, 1 drachm.
Pure water, 6 ounces.

Mix, and take a sixth part every four hours.

Or, Take of extract of conium, 2 scruples.

Divide into ten pills, and give one every four hours. Chloroform may be inhaled to relieve the pain attending the violent contractions. Indian hemp has afforded relief in some cases, and may be given in the following form:—

Take of Tincture of Indian hemp, ½ drachm.
Water, 6 ounces.

Mix, and let a sixth part be taken every three or four hours.

The late Dr. R. B. Todd was in the habit of treating cases of this nature by the application of ice to the spine. In a few cases the aid of surgery has been sought to assist the above remedies. The nerve supplying the wounded part has been divided; thus Dr. Murray divided the posterior tibial nerve in a boy who had run a rusty nail into the sole of his foot.

(8.) HYDROPHOBIA.

This disease consists essentially of nervous irritability and apprehension, with difficulty in swallowing fluids. It is due to the introduction into the system of an animal poison produced by the saliva of the dog and other animals whilst in a rabid state. After a person has been bitten by a dog, the poison is supposed to remain dormant in the wound for an uncertain space of time, varying from six weeks to eighteen months, and this is called the period of *incubation*. The following symptoms then begin to show themselves: pain and uneasiness in the wound, the cicatrix aches and tingles, and is red and swollen, and sometimes reopens, and discharges a peculiar ichorous fluid; the patient in the mean time becomes hurried and irritable, his neck and throat grow stiff and painful, and he is unable to swallow fluids, and even the sight or thought of them suffices to bring on a paroxysm of choking; the breath is deeply drawn, and the respiration has a sighing character; tough mucus is coughed up, and frothy saliva runs from the mouth. In some cases palsy of the lower extremities is present. In hydrophobia the head does not remain clear as in locked-jaw; but towards the last becomes much affected, active delirium setting in; these symptoms increasing in severity, and the paroxysms becoming more frequent and more violent. Death usually occurs on the second or third day of the disease.

The paroxysms may be brought on by drinking, or by the sight of fluids, or by hearing them poured from one vessel into another, by a gust of wind across the face, by waving a mirror before the patient, and by many other trivial circumstances of a like nature.

Treatment.—When a person has been bitten by a dog he should have the injured part excised at once to *prevent* so fearful a malady as that now under consideration; for when once fully formed, the remedies that are in general use are all but powerless. Chloroform may be inhaled, ice may be applied to the upper part of the spine, and prussic acid will be of service; opium may be given in moderate doses, and the sufferer must be well fed on beef tea, wine, brandy, and other nutritious and stimulating food, if possible for him to swallow them, and if not nutritious injections must be thrown up the bowels.

(9.) SHAKING PALSY, OR PARALYSIS AGITANS.

Mr. Parkinson well defines this disease thus: "Involuntary tremulous motion, with lessened muscular power, in parts not in action, and even when supported; with a propensity to bend the trunk forward, and to pass from a walking to a running pace; the senses and the intellect being uninjured." The approach of this disease is slow and insidious, weakness and trembling seize upon some parts of the body, perhaps the head or the hands, the patient stoops, and these symptoms increase in severity till the invalid is unable to write, or to feed himself, the power of speech becomes much affected, saliva dribbles from his mouth, and death soon releases the miserable patient from his many sufferings. Our means for curing this morbid state are very limited; the general health must be improved, all the functions of the body must be kept in a healthy working order, the *bowels must be regulated*, and the strength supported by a full diet, and the use of some preparation of steel in combination with quinine.

Take of Tincture of the perchloride of iron, 1½ drachm.
Dilute hydrochloric acid, ½ drachm.
Sulphate of quinine, 1 scruple.
Pure water, 8 ounces.

Mix, and take an eighth part three times a day.

(10.) EPILEPSY.

This disease is commonly known by the name of "falling fits;" its leading symptoms consist of a temporary loss of consciousness, with spasmodic affections of the muscles, succeeded by a state of somnolency; the attacks recurring at uncertain intervals.

It may be ushered in by premonitory symptoms, or may come on immediately without any previous warning; a person in the apparent enjoyment of perfect health is suddenly stricken down, having uttered a loud and piercing scream, senseless and convulsed; his muscles are put forcibly into action in his violent struggles, his breathing becomes hindered, and his face livid and congested; foam issues from the mouth and nostrils, and the tongue being caught between the teeth, and bitten, is frequently covered with blood; the pupil is dilated, and the features distorted; the brows are knit, the eyes wide open, fixed, and staring, or turned up so as to leave the white part only exposed; the mouth is drawn to one side, the hands are firmly clenched, and the fæces and urine pass involuntarily during the long-continued striving of the unconscious patient. After these symptoms have lasted about ten minutes, or a quarter of an hour, the sufferer becomes more composed, and sometimes quickly returns to his previous state of health, but is usually left in a more or less sleepy condition, varying in its duration, and leaving the invalid much debilitated, furiously delirious, or deprived of his intellectual power, or the power of voluntary motion.

The *premonitory* symptoms of this affection vary in their nature and intensity, sometimes being altogether absent. The patient is dull, languid, taciturn, sullen, and irritable, or perhaps in a fuller enjoyment of spirits than usual. In some cases the nerves of special sense become impaired in the performance of their several functions; thus, he may suffer from ill smells, illusions of the senses, and specks floating before the eyes; he may have various disturbances within the head—giddiness, dimness of sight, headache; in other cases nausea and vomiting are troublesome. There is one sign of the approach of an epileptic fit called by medical men the *epileptic aura;* it is a sensation running from one of the extremities, a hand or foot, towards the head, and just when it stops the convulsive paroxysm sets in; it has been compared to the sensation of a stream of hot or cold air, or to the trickling of water, and many fits have been prevented by grasping the limb tightly just above the spot where this sensation is becoming perceptible.

Epilepsy begins often in early life in the form of infantile convulsions during teething or hooping cough. By its frequent recurrence the intellect becomes seriously damaged, more injury being inflicted upon it in proportion to the frequency of the fits than in proportion to their violence. The first attack is most common before the age of puberty, between the seventh or eighth year, or, again, between the ages of fourteen and sixteen. Its attacks are few in number at first, being confined to the dark hours of night, but as time runs on they become more frequent, and begin to take place in the daytime as well as at night; it is looked upon as a favourable sign when the disease after some standing again becomes confined to nocturnal attacks.

Causes.—Epilepsy may originate in some morbid condition affecting the nervous centres themselves, or the brain may be unduly excited by sensations conveyed to it by afferent nerves connecting it with various distant parts of the body; in scientific parlance the former is called centric, and the latter eccentric epilepsy; there may be many causes of the eccentric form, such as teething, worms, indigestible food, debauchery, and tickling the soles of the feet. Many different conditions of the brain may give rise to the centric form of epilepsy, tumours may be formed in its nervous substance, disease may overtake the investing membranes, and over-excitement from emotional influences, grief, terror, joy, or anxiety may act as its exciting causes. Epilepsy is hereditary, being transmitted from father to child, and from grandfather to grandchild. A misshapen head is often associated with this disease, contracted in one or more of its diameters, and enlarged in another. Persons of the scrofulous diathesis are more liable than others to fall a prey to its weakening powers.

This disease must be carefully distinguished from hysteria, for while the former is a most dangerous malady, incapacitating the patient for business, sapping his intellect, and closing in a premature death, the latter gets well of itself under the combined influence of mental and moral discipline, which are more necessary to its cure than drugs in any form whatever. In epilepsy there is complete loss of consciousness, the patient cannot be roused, he does not choose his place or opportunity for falling, his face is livid and congested, foam issues from the mouth, and his tongue is frequently bitten by the violent spasmodic action, and he often passes his urine and fæces during the fit. In the hysterical paroxysm there are alternate fits of crying and laughing, the patient can always be roused, and she does not bite her tongue. In epilepsy the eyes are half open and staring, but the hysterical girl prefers closing them. The skin of an epileptic is cool, but in hysteria is bathed with perspiration. The epileptic fit does not last more than ten minutes or half an hour, usually about ten or fifteen minutes, but a patient may be struggling in hysteria by the hour together.

Treatment.—This must be divided into two parts, that during the interval between the fits, and that during the fit. While the patient is still struggling in an unconscious state, prevent him injuring himself, bathe his face with cold water, loosen all clothes about his neck, and in some cases where spasm of the muscles is very great chloroform will give immediate relief. Many drugs have been said to alleviate this disease, and may be tried with advantage during the intervals, but our hopes will often be disappointed; several of these medicines act as nervine tonics, as the salts of silver, zinc, and iron. When a patient has received a warning of the fit approaching, it may be warded off by the timely administration of chloroform, or by the following antispasmodic draught:—

Take of Sulphuric æther, 20 drops.
Compound tincture of lavender, 15 drops.
Camphor water, 1½ ounce.

When the disease is due to emotional influences great benefit will be derived from opium or morphia given at bedtime.

Take of Laudanum, 20 drops.
Water, 1½ ounce.

Mix, and let it be taken every night at bedtime.

When the patient's blood is impoverished, and his countenance pale, some tonic must be given.

Take of Sulphate of zinc, 20 grains.
Pure water, 6 ounces.

Mix, and take a sixth part three times a day.

Or if steel be preferred as a tonic—

Take of Ammonio-citrate of iron, 1 drachm.
Compound spirits of ammonia, 2 drachms.
Distilled water, 8 ounces.

Mix, and let an eighth part be taken every six hours.

During the last year or two a new preparation has been brought forward, and thought to act as a direct sedative upon the nervous system, and, consequently, to be well suited to the treatment of this disease; it is called the bromide of potassium; it deserves a trial, and should be given in water, thus:—

Take of Bromide of potassium, ½ drachm.
Water, 6 ounces.

Mix, and let a sixth part be taken every four hours.

All the functions of the body must receive due attention, and be brought into as healthy a state as possible, no indigestible food must be allowed, smoking should be given up as tending to disarrange the circulation, and to produce indigestion, the invalid must take plenty of exercise in the open air, and no tax or stress should be made upon the brain; the student should at once close his books, and the speculative man curtail his business projects. Mental emotion of all kinds must be studiously avoided.

(11.) Hysteria.

Hysteria is a nervous affection principally affecting females, but occasionally seen in delicate and sickly men. In its attacks it resembles in many points those of the preceding disease, epilepsy, and at other times mimics other more important affections. The hysterical paroxysm is marked by spasmodic twitchings of the limbs, the extremities are alternately bent and straightened with great violence. Sometimes the patient curves her back into a deep arch, resting herself upon the bed supported by her head and heels only; this is technically called *opistholonos*; but in other cases the body is bent forward. The eyes are closed, and the face flushed, but there is no distortion of the countenance, the breathing is deep and irregular; after this state of things has lasted for some little time the patient becomes more quiet and composed, but soon has a return of all the symptoms, and this alternation of struggling and quietude may last for some time, and frequently ends in tears and laughter. During a fit the abdomen is much distended, and towards its end a large quantity of pale limpid urine is discharged of low specific gravity. Corresponding to the aura epileptica, or the creeping sensation felt upon the setting in of an epileptic fit, we have in hysteria a peculiar sensation of a ball or lump rising from the stomach into the throat, and the patient is constantly trying to swallow it, and thus get rid of it; but it still remains, and the invalid often consults her medical man under the idea that she is suffering from quinsy; this peculiar sensation has been called the *globus hystericus*.

Causes.—This disease is closely connected with an excited condition of the uterine system, and may be often traced to the influence of grief, terror, mental anxiety, disappointment, &c.

Treatment.—During the paroxysm the patient must be protected from injury; she should be removed to a cool room, her dress loosened, and she may be roused by pouring cold water over her face and chest. Ammonia may be held to her nostrils, and the following antispasmodic draught prescribed:—

Take of Ammoniated tincture of valerian, 20 drops.
Camphor water, 1½ ounce.

Or a fœtid enema may be given, thus:—

Take of Tincture of assafœtida, 6 drachms.
Mucilage of starch, 6 ounces.

During the intervals between the fits the general health must be improved, the functions of the uterine system attended to, and moral and mental discipline brought to exert its influence upon the excitable temperament of the patient: if she be weak, pale, and anæmic, steel should be given, and the bowels kept regular in their action by aperient pills.

Take of Ammonio-citrate of iron, 1 drachm.
Compound spirits of ammonia, 1 drachm.
Salicine, ½ drachm.
Pure water, 6 ounces.

Mix, and take a sixth part three times a day.

Take of Compound extract of colocynth, 2 scruples.
Calomel, 24 grains.

Divide into twelve pills, two of which must be taken occasionally at bedtime.

Hysterical patients should be ordered to use the cold shower or plunge bath every morning. Of all nervous affections this spreads the most rapidly by moral contagion; if one patient in a ward be hysterical, oftentimes several of her companions become affected with the same disease. Sympathy, too, has a great influence over this disease: when the patients excite the pity of their friends and those who may chance to be around them, they can command a fit of hysteria at their desire. Hot rooms, late hours, and novel reading must be avoided by all girls predisposed to this affection. Married life often proves a cure. To compare the symptoms of the hysterical paroxysm with those of the epileptic fit, read the article on the symptoms, causes, and treatment of epilepsy.

(12.) Saint Vitus's Dance, or Chorea.

This disease is marked by irregular, involuntary, and convulsive movements of various parts of the body, beginning in the face and arms; the features assume an absent look, various small muscles of the face are in constant action, the mouth is opened and shut alternately, and the patient has the look of one who is making faces at you; she speaks in a hurried and disjointed manner, and articulates with difficulty. When asked to put out her tongue there is some hesitation, then it is quickly thrust out, and as suddenly withdrawn, the teeth often closing with a distinct snap. Both sides of the body may be affected, but usually one side suffers more than the other; the hands and arms are moved about in various hideous ways; as the patient lifts her food to her mouth her arm makes a sudden start, and her object is defeated. Alternating movements are frequently noticed, the back of the hand is first placed upon the lap, the hand is then turned round, and the palm placed downwards; and these kinds of movements take place sometimes with marvellous rapidity; the feet are shuffled upon the floor, and she writhes and contorts her shoulders.

This affection more frequently happens in girls than boys, and especially in those of a delicate and nervous temperament; like other spasmodic diseases, it may extend by imitative contagion. The involuntary movements cease during sleep. Saint Vitus's dance is more common in children of dark complexion and eyes, and happens more frequently in the colder than the warmer months of the year. The most common age for it to make its first appearance is between the eighth and sixteenth year.

Causes.—These may be divided into those predisposing to, and those exciting the disease; among those of the first kind we have age, sex, and debility, as well as complexion, and the season of the year, which have already been considered. Chorea occurs in the female about three times as often as in the male; it is generally seen in the young, but may occur at all ages. Not long since the author had under his care a patient suffering from this disease, who had reached her twenty-third year. The principal exciting causes are fright, rheumatic fever, irritation of the uterine system, or of the alimentary canal. Many cases can be traced to the immediate effects of fright, and acute rheumatism, in some way at present not well understood, causes this affection through the heart disease which it so often leaves behind it. Worms in the intestines, teething, and the return of the monthly period, exert a powerful influence, also, in the production of this disease.

Saint Vitus's dance seldom proves fatal, but in some rare instances the movements have been so violent, and the disease so obstinate, that the patient has been completely worn out and at last sunk.

Treatment.—The general health must be improved, and the bowels regulated by gentle aperients; the patient should live well and take plenty of exercise, the cold bath may be used every morning, and if symptoms of debility be present, steel may be given to improve the condition of the blood.

Take of Sulphate of iron, 20 grains.
Sulphate of quinine, ½ drachm.
Dilute sulphuric acid, ½ drachm.
Pure water, 6 ounces.

Mix, and give one tablespoonful every six hours.

(The above prescription is intended for a child ten years old.)

The salts of silver, zinc, copper, and arsenic have cured many cases of this disease, and act as nervine tonics.

Take of Sulphate of zinc, 20 grains.
Compound tincture of lavender, 1 drachm.
Distilled water, 6 ounces.

Mix, and take one tablespoonful three times a day.

(For a patient ten years of age).

Dr. Begbie, of Edinburgh, recommends the use of arsenic, and says that he has never known it fail. Strychnine and Indian hemp are also praised for their power over this disease, but are dangerous remedies in inèxperienced hands. Bromide of potassium, which has been brought out during the last two or three years, is useful, and may be thus given to a patient ten years old:—

Take of Bromide of potassium, 1 drachm.
Camphor water, 6 ounces.

Mix, and give one tablespoonful three times a day.

In most instances the affection soon improves under the combined use of steel, cold baths, and a liberal diet. If there be reason to suppose it due to irritation in the alimentary canal from the presence of worms, they must be expelled by the use of appropriate remedies.

(13.) MERCURIAL TREMOR.

This disease is met with in persons who work amongst the fumes of mercury, as button gilders, barometer makers, and workers in quicksilver mines. It consists of convulsive movements of the voluntary muscles when they are called into action or are not supported. When the limbs are not in use no movements take place, and from this circumstance this affection is readily distinguished from shaking palsy, in which the limbs are never still, whether called into action or not. This malady generally creeps on its victims by degrees, but sometimes appears more suddenly. The arms, head, and limbs tremble, mastication and locomotion are with difficulty performed, and if the patient still goes on with his employment his hands become perfectly useless. As the disease advances digestion becomes impaired, the skin assumes an olive hue, the tongue becomes furred, and the teeth black.

Treatment.—The sufferer must at once give up his unhealthy occupation, must take plenty of fresh air and exercise, and some form of steel should be given, as—

Take of Sulphate of iron, 12 grains.
Infusion of quassia, 6 ounces.

Mix, and let a sixth part be taken three times a day.

Iodide of potassium is supposed to be capable of rendering the mercury already in combination with the tissues more soluble, and so favouring its removal from the system: it may be given in the following form:—

Take of Iodide of potassium, ½ drachm.
Bicarbonate of potash, 20 grains.
Salicine, 30 grains.
Pure water, 8 ounces.

Mix, and take an eighth part three times a day.

Workmen who earn their daily bread by inhaling these noxious fumes should pay strict attention to cleanliness, should avoid inhaling them as much as possible, and the room in which they work ought to be freely ventilated.

(14.) HEADACHE, OR CEPHALALGIA.

● Headache is so common a disease, and the cause frequently of such intense suffering, that it must not be passed by unnoticed in any systematic treatise on domestic medicine. This affection may be divided into three forms: First, that due to plethora, or headache occurring in persons of full habit; secondly, when it is due to some disarrangement of the stomach or liver; and in the third form it is caused by debility and exhaustion of the nervous system.

Treatment.—When headache habitually occurs in persons of full habit, he must regulate his diet and take plenty of exercise, the bowels must be kept freely open by the occasional use of a gentle aperient, such as 5 grain doses of compound rhubarb pill, and the back of the neck may be cupped and leeches applied to the temples or blisters placed behind the ears. Bilious headache must be treated by improving the general health, and looking to the functions of the liver and stomach to see that they are more efficiently performed, the diet should be scanty, and the patient must take plenty of exercise in the open air. Headache depending upon nervous affections may be remedied by giving tone to the system at large by the administration of nervine tonics, steel or some salt of zinc being often found useful.

Take of Ammonio-citrate of iron, 1½ drachm.
Compound spirits of ammonia, 1 drachm.
Salicine, 2 scruples.
Pure water, 8 ounces.

Mix, and take an eighth part three times a day.

(15.) TIC DOULOUREUX.

This is a nervous affection consisting of a lancinating pain darting about the face, following closely in the tracks of distribution of the several branches of nerves to this region. It is an acute, plunging pain, coming on in paroxysms, extending from the cheek into the temple, brow, forehead, and scalp, and is usually confined to one side. It may be brought on by many causes of a trivial nature; a current of air, a slight touch, or the exertion of speaking or eating may give rise to one of its paroxysms. It is more often met with in those who are delicate, pale, and weak, and who have been reduced by some long drain upon the system; it frequently attacks poor women who have been suckling their infants for some time past. It not unfrequently accompanies disorders of the digestive organs, and affections of a rheumatic character. Sometimes it can be traced to the influence of malaria, and at others to some local irritation, such as pressure from diseased bone, or tumours in the course of the nerve affected.

Treatment.—This is a most obstinate disease to treat, but before thinking of specific remedies we must search out its cause. If the patient be weak and anæmic some tonic must be prescribed.

Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 1 scruple.
Dilute sulphuric acid, 1 drachm.
Compound tincture of lavender, 1 drachm.
Distilled water, 6 ounces.

Mix, and let a sixth part be given every four hours, the bowels must at the same time be regulated by two of the following pills taken when required at bedtime:—

Take of Calomel, 12 grains.
Compound extract of colocynth, 2 scruples.

Mix, and divide into twelve pills.

If it be due to the influence of malaria, quinine or arsenic must be given in full doses.

Take of Sulphate of quinine, 1 scruple.
Compound tincture of orange peel, 1 drachm.
Dilute sulphuric acid, 40 drops.
Pure water, 6 ounces.

Mix, and give a sixth part three times a day.

In all cases the digestive organs must be attended to, and brought into healthy action; when the disease depends upon rheumatism, iodide of potassium should be given.

Take of Iodide of potassium, ½ drachm.
Bicarbonate of potash, 20 grains.
Wine of colchicum, 1 drachm.
Distilled water, 6 ounces.

Mix, and take a sixth part three times a day.

In some cases where medical treatment has failed, surgery has been more successful: thus the trunk of the painful nerve has been divided in a few cases with benefit to the wearied sufferer. Should the pain be very severe and the disease obstinate of cure, sedatives may be given internally, and soothing liniments applied externally.

Take of Laudanum, 15 drops.
Water, 1 ounce.

Mix, and make a draught, which may be taken twice a day.

A liniment containing tincture of aconite may be rubbed into the affected cheek.

Take of Tincture of aconite, 1½ drachm.
Opodeldoc, 1½ ounce.

Mix, and make a liniment, to be rubbed in twice or three times a *day and labelled* "poison," and for external application only.

(16.) Sciatica.

This is a painful affection of the sciatic nerve, running down the posterior part of the thigh, often extending into the back and loins. It is of the same nature as tic douloureux, and may be due to inflammation of the nerve or to some rheumatic affection. In seeking the cure of this disease we must first endeavour to make out its cause, and then to apply the same remedies as recommended when treating of the previous disease. Blisters may be applied with advantage over the seat of the pain.

(17.) Concussion of the Brain.

Concussion of the brain follows immediately upon some blow upon the head, and is marked by faintness, sickness, insensibility, and stupor; the pulse is feeble and slow, and the skin pale and cool. If the shock be but slight the patient soon recovers from it, but continues to suffer for some time from headache, giddiness, and ringing noises in the ears. In severer cases the insensibility is more complete and lasts for a longer time, it being impossible to rouse the patient. Besides concussion of the brain we may have concussion of the spinal marrow from violent bodily injuries. A few weeks since the writer had under treatment an old man who had been thrown from his donkey cart, and pitching upon his shoulder severely jarred his spine, and concussion of the spinal cord soon followed, he lost all power over his legs and hands, but his bladder and bowels remained unaffected, and by rest and quietude he soon recovered from the shock which the nervous system had sustained.

Treatment.—This affection requires but little treatment, the patient must be carefully watched, he should be placed upon a bed and covered over warmly, a gentle purgative should be given, and in some cases stimulants may be necessary, but these should be given with caution in cases of accident for fear of exciting the circulation, and causing cerebral hæmorrhage. The diet must be restricted for the first few days. Some surgeons maintain that all we should do while the patient is fainting and in a state of collapse from shock is to examine him, while he is yet almost deprived of sensation, to see what limb or limbs may be fractured or otherwise injured by the accident which has given rise to the concussion. Cold lotions applied to the head when reaction sets in often give great comfort to the feelings of the patient.

DISEASES OF THE ORGANS OF RESPIRATION.

(1.) Cold in the Head, or Catarrh.

Nothing is more common in the colder and damper seasons of the *year, than to hear that* some person is suffering from a cold in the head; by the more educated it is styled influenza, and by medical men catarrh. It consists of inflammation of the mucous membrane lining the cavity of the nose and its recesses. In the first stage this membrane is dry, red, swollen, and congested, tender to the touch, and irritable; with all this there is loss of smell, and the cold air excites sneezing. In the second stage the inflamed membrane secretes a thin serous fluid of an acrid character, fretting the sides of the nose and the upper lip wherever it may happen to come into contact with them. As the disease advances, the secretion becomes more viscid, thick, yellow, opaque, and purulent, no longer fretting the upper lip, having now lost its irritating properties; after a short time the secretion begins to diminish, and the patient is restored to health. This is the course then of a common cold in the head, of an ordinary attack of catarrh; but in other severer cases this generally slight affection may find its way down the air passages, and end fatally in bronchitis or inflammation of the lungs.

Besides this secretion from the nostrils, the sufferer is feverish, he has headache, pain in the forehead, a furred tongue, sore throat, watering of the eyes, hoarseness, thirst, loss of appetite, and a frequent pulse. There is a general aching of the limbs, and he is unable to exert himself.

Causes.—Exposure to cold and wet, being generally due to too sudden a change of temperature, or to the influence of a draught or current of air.

Treatment.—The patient should be placed on slop diet, he may take gruel, arrowroot, oatmeal, beef tea, or mutton broth. The cure of the disease may be assisted by acting on the skin, kidneys, and bowels. Medicine producing free perspiration should be given.

Take of Solution of the acetate of ammonia, 2 drachms.
Sweet spirits of nitre, 1½ drachm.
Tincture of henbane, 1 drachm.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken every three or four hours during the day.

Take of Dover's powder, 10 grains.

Make one powder, and take it in a basin of gruel at bedtime.

Before getting into bed the feet should be placed into water as hot as it can be borne, and the hot bath or hot air bath may be used with advantage. The bowels must be regulated by taking one tablespoonful of castor oil on rising in the morning whenever it may be required. Dr. Watson directs a draught containing 20 drops of laudanum in water to be taken at bedtime to cut short this disagreeable affection. When the invalid is not predisposed to inflammatory attacks, and he is suffering merely from simple catarrh, he is often benefited by a good dinner, and an extra glass of wine. Dr. Williams treats this disease by withholding all kinds of fluids, under the idea of diminishing the amount of water in the blood, so that it may be impossible for the blood-vessels to pour out so abundantly this abnormal secretion of catarrh. He allows a tablespoonful of tea or milk for the morning and evening meals, and a wineglassful of cold water at bedtime. This method is not in general use among physicians, nor has it been found on trial to possess any advantage over other methods of treatment. The daily use of the cold shower-bath is useful in preventing this disease.

(2.) ACUTE BRONCHITIS.

Closely associated with simple catarrh is inflammation of the mucous membrane lining the tubes leading to the lobules and ultimate air cells of the lungs; as previously mentioned, the one often runs into the other, and each acknowledges the same class of causes, viz., cold, and exposure to wet.

This disease usually affects both lungs and their lower parts, it is attended with chilliness, sore throat, hoarseness, shivering, constriction and tightness across the chest, harassing cough with expectoration in the earlier stage of a thin, frothy, serous fluid, and in the later of a more opaque, yellow, viscid, puriform secretion, which is generally more or less *streaked* with blood. The breathing is short, difficult, and laborious, the skin is hot, the pulse quick, and there is headache, and a general feeling of lassitude; this disease, although much more serious in its nature than catarrh, runs through exactly the same phases as that affection was described as doing. The aid of a medical man should be sought early in this disease, as it often runs a very rapid course, and he will be able by his stethoscope and a well-trained ear, to diagnose the exact stage at which the disease has arrived, and to prescribe remedies accordingly.

Causes.—Acute bronchitis may be brought on by the action of cold, by the inhalation of chemical and mechanical irritants, by the obstruction offered to the circulation by disease of the heart, and it occurs in many cases in which there is some morbid condition of the blood, as in the course of Bright's disease, typhus and typhoid fevers, measles, scarlatina, and small pox. It is very fatal to old people and young children.

Treatment.—Bleeding is seldom necessary in this disease, but may prove useful when the patient is young, strong, vigorous, and plethoric, if his pulse be full and strong, and there be signs of venous congestion. The skin and the mucous membrane of the affected tubes should be acted upon by tartar emetic, which may be thus given:—

Take of Tartar emetic, 2 grains.
Nitrate of potash, ½ drachm.
Bicarbonate of potash, 1 drachm.
Pure water, 8 ounces.

Mix, and let an eighth part be taken every three or four hours.

The patient, if not too much exhausted, may be placed in a hot bath, the room must be heated, and kept regularly at a temperature of 65°, and be filled with an atmosphere of steam. Turpentine stupes and mustard poultices may be applied over the seat of the disease. When the disease has taken more rapid strides, and is further advanced, the patient being already much reduced, lowering measures, such as bleeding and tartar emetic, must be no longer had recourse to, but some diffusible stimulant will be required.

Take of Compound spirits of ammonia, 1½ drachm.
Choloric æther, 1 drachm.
Distilled water, 6 ounces.

Mix, and give a sixth part every four hours.

When there is much accumulation of secretion in the lungs, and the breathing is very laborious, an emetic of sulphate of zinc will be found useful.

Take of Sulphate of zinc, 1 scruple.
Water, 2 ounces.

Stimulants in the form of brandy or wine will be necessary, and the patient's strength must be nurtured by strong beef tea given every hour or two by the hand of a well-tried conscientious nurse.

When the disease has still further advanced, and the patient is bathed in profuse perspiration, and the viscid secretion is discharged in large quantities, steel and quinine will do good.

Take of Sulphate of iron, 15 grains.
Sulphate of quinine, 20 grains.
Dilute sulphuric acid, 1½ drach
Pure water, ½ pint.

Mix, and give an eighth part every four or five hours.

Opium must be given with great caution in this disease, for in severer cases the process of respiration is but imperfectly performed, and the patient is partially narcotised by the retention of carbonic acid in the system, and by the addition to this of the soporific influence of this drug, he may be sent into a deep sleep, from which he may never rise again. When the lips and cheeks are blue from the circulation of blood imperfectly oxygenised, it ought on no account to be given.

(3.) Chronic Bronchitis.

Chronic inflammation of the bronchial tubes is very common in persons advanced in years, it is often a sequel of the acute form, but seldom follows the first attack, the patient having in all probability had attacks of cough and catarrh during several preceding winters. In the summer time he is, comparatively speaking, well, suffering only from shortness of breath. It is accompanied by habitual cough, difficult respiration, and expectoration of a scanty, viscid, grey, frothy secretion, sometimes streaked with blood, or it may be viscid, yellow, opaque, and puriform.

Causes.—It is often the result of exposure to cold, intemperate habits, and the unhealthy employment of some of the lower classes, such as manufacturing needles, pottery, and cutlery, which gives rise to the diffusion of dust and grit through the air, and being brought into contact with the mucous membrane gives rise to inflammation, and all the above detailed symptoms of chronic bronchitis. In some few cases it is the result of disease in the organs of circulation.

Treatment.—Chronic bronchitis must be treated by stimulating expectorants.

Take of Carbonate of ammonia, 16 grains.
Decoction of senega, 8 ounces.

Mix, and let an eighth part be taken three times a day.

Or, Take of Compound tincture of benzoin, 3 drachms.
Carbonate of ammonia, 18 grains.
Mucilage of gum Arabic, 6 ounces.

Mix, and give a sixth part every six hours.

In some cases in which the patient is much debilitated, tonics are needed.

Take of Ammonio-citrate of iron, 1 drachm.
Compound spirits of ammonia, 1½ drachm.
Pure water, 8 ounces.

Mix, and let an eighth part be taken three times a day.

If the secretion from the inflamed tubes be profuse, sulphate of iron with dilute sulphuric acid should be given.

Take of Sulphate of iron, 15 grains.
Sulphate of quinine, 12 grains.
Dilute sulphuric acid, 1 drachm.
Distilled water, ½ pint.

Mix, and let two tablespoonfuls be taken three times a day.

His diet must be liberal, and wine and brandy should be freely given. Urgent symptoms may be relieved by the application of mustard poultices, turpentine stupes, blisters, or dry cupping to the chest.

(4.) ASTHMA.

This disease consists of paroxysms of difficult respiration coming on at uncertain intervals, usually during the night, accompanied by wheezing respiration, and terminating in copious mucous expectoration. Previously to the occurrence of the paroxysms the patient has warning of what is about to happen from the state of his digestive organs; he begins to lose his appetite, and to suffer from lassitude, weariness, drowsiness, oppression, flatulence, and belching, and he retires to rest with a general feeling of illness. After passing several long and uncomfortable hours, perhaps dozing a little at intervals, he wakes up about two or three o'clock in the morning with a sense of *tightness and constriction* in the chest. He sits up, and leaning *forward, places his elbows* upon his knees; he labours to get his breath, and feeling the absolute necessity for pure air rushes to the window which he quickly opens. His extremities are cold, but his body is bathed in perspiration; the face is flushed and turgid, the pulse feeble and irregular. A large quantity of pale limpid urine, like that secreted during the hysterical paroxysm, is passed before or during the fit. This state lasts for an uncertain period, there may be slight remissions, but at last he expectorates a large quantity of mucus, and the asthmatical paroxysm is at an end. During the intervals he enjoys a fair share of health, but is always short-winded.

The air tubes of the lungs are surrounded by muscular fibres resembling those encircling the bowels, and this disease is essentially due to the abnormal contraction of this tissue, and the consequent narrowing of the passages through which the air has to pass. These fibres surrounding the bronchial tubes have been proved to be muscular by the aid of the microscope, which shows that their intimate structure corresponds with that of organic, or involuntary muscles in various other parts of the body; again, they have been made to contract like muscular fibres under the influence of galvanism, and to materially shorten themselves by the application of this force to the nerve, or nerves, supplying them.

That this disease is of a spasmodic nature may be inferred from the consideration of the following facts:—that spasm co-exists in other parts of the body in some cases, that asthmatical patients describe the feeling as that of spasm; again, the way in which the paroxysm comes on, and the capricious manner in which it goes off, both point to spasm as its source, and, finally, the disease is much alleviated and shortened by antispasmodic medicines.

Causes.—Asthma is hereditary, being transmitted from father to son, and grandson. It may be due to alterations in the lungs themselves, and to diseased states of the heart and large blood-vessels. It is most common in men, and in the middle period of life. Particular states of the atmosphere may excite a fit of asthma, and other causes may bring it on which are of too subtle a nature for our appreciation; thus many instances are known in which asthmatical patients could never sleep in a certain room of a house without an attack, while he could pass an uninterrupted night's rest in any other sleeping apartment of the same house; or a person is able to sleep in a house on one side of the street, but not in one on the other side. Some individuals cannot breathe an atmosphere containing finely divided particles of ipecacuanha without suffering severely from attacks of cough and difficulty of breathing resembling closely the asthmatical paroxysm as above described.

Treatment.—Bleeding is not required; opium may be given freely, and will be found of great service when combined with sulphuric æther, thus:—

Take of Laudanum, 1 drachm.
Compound spirits of æther, 2 drachms.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken every two or three hours.

Stramonium has been much praised for its power over this disease, and is very beneficial, especially when it causes copious expectoration; it may be smoked like tobacco; and there are little cigarettes made containing this drug, which form a very convenient method of giving it. If the dyspnœa be urgent, and the spasm violent, chloroform inhalation will relieve the patient's suffering, and cut short the paroxysm. Paper dipped in a solution of saltpetre, and dried, generally known as "touch paper," should be burnt and the fumes inhaled, as it is often found to give great relief. Lobelia has done good in some cases, but it requires care in its administration: it may be given thus:—

Take of Tincture of lobelia, 1 drachm.
Camphor water, 6 ounces.

Mix, and give a sixth part every four hours.

Strong coffee is a very pleasant remedy, and should be drank freely. Turpentine stupes may be applied to the chest, and the daily use of the cold shower-bath will be found useful during the intervals in preventing the recurrence of the paroxysm.

(5.) INFLAMMATION OF THE LUNGS, OR PNEUMONIA.

Inflammation of the substance of the lungs is characterised by the following symptoms: pain on the affected side of the chest, difficult breathing, cough, and a peculiar expectoration; it commonly sets in with distinct rigors followed by flushes of heat, the pulse becomes frequent, the skin hot, and the tongue furred. As the disease advances the patient begins to wear an anxious expression, and at times to suffer from delirium; the urine becomes high coloured and turbid. The expectoration is highly characteristic of this disease; it may be scanty or entirely absent at first, but as the inflammatory process runs on it becomes more abundant, being tough, viscid, and tenacious, adhering to the sides of the containing vessel, so that it may be turned bottom upwards without spilling it; it may be white, but being generally intimately mixed with blood varies in colour, from saffron yellow to the bright hue of arterial blood, it is generally described as being "rust-coloured." In bronchitis the sputum is frothy, viscid, and *streaked* with blood; the blood is not mixed with the mucous secretion, but lies upon its surface in distinct lines. The skin is hot and dry, the temperature of the body, as measured by the thermometer, being highest on the fourth day of the disease, often reaching then as high as 104° or 105°, the normal temperature being 98·4°; after this period of the disease it gradually falls till the ninth day, when the thermometer shows that it has reached its usual point. The pain in this disease depends upon the investing membrane of the lungs being in the first stage of inflammation; it is aggravated by coughing, inspiration, sudden changes of posture, and by percussion on the ribs over the diseased membrane. Inflammation attacks the lower part of the lungs, and more frequently affects the right side than the left; it runs its course in about ten days.

Causes.—Mechanical injury may give rise to this disease, such as a wound inflicted by a fractured rib, or a blow upon the surface of the chest. It is frequently due to exposure to cold and moisture, and often makes its appearance during the course of other diseases, as scarlatina, measles, typhus and typhoid fevers. The irritation of tubercle may lay its foundation; and in some cases of death from extensive burns the lungs have been found in a state of inflammation. Like bronchitis, it proves very fatal to young children, and persons advanced in years.

Treatment.—During the last few years it has been shown by careful observers, that this disease in its mild form has a strong tendency to work its own cure in the course of eight or ten days; by the establishment of this important fact great change has been wrought in our method of cure; the large bleedings, and depressing doses of tartar emetic and mercury of the older practitioners have to a great extent been set aside, and Dr. Bennett, of Edinburgh, has written a pamphlet during the past year on the restorative treatment of this disease, in which he shows that he has not had more than two or three deaths in one hundred cases which have come under his care. The patient should be placed in bed and kept perfectly quiet, the room should be steadily maintained at a temperature of 65°. He must be placed on fever diet, consisting of beef tea, mutton broth, gruel, arrowroot, and other nutritious food of this kind. If the disease proceeds from cold, the hot air bath may expedite the cure when had recourse to early. On the very onset of the disease small doses of tartar emetic, frequently repeated, will act on the skin, quiet the circulation, and tend to improve the condition of the patient.

Take of Tartar emetic, 2 grains.
Saltpetre, ½ drachm.
Bicarbonate of potash, 1 drachm.
Camphor water, 8 ounces.

Mix, and give an eighth part every three or four hours.

The bowels must be regulated by mild aperients. During the later stages blisters may be applied over the affected lung, but they should never be used while the disease is yet in its infancy, as they then tend to increase the already excited state of the system. When the powers of life begin to flag, stimulants will be necessary—four to six ounces of brandy given at intervals in small quantities, during the day will revive the weary patient, and the following medicine may with advantage be prescribed:—

Take of Compound spirits of ammonia, 1½ drachm.
Chloric æther, 1 drachm.
Pure water, 6 ounces.

Mix, and let one sixth part be taken every four hours.

When the patient is recovering, his strength and general health may be improved by the exhibition of steel and quinine, thus:—

Take of Sulphate of iron, 16 grains.
Sulphate of quinine, 10 grains.
Dilute sulphuric acid, 1½ drachm.
Pure water, ½ pint.

Mix, and take two tablespoonfuls three times a day.

As in all other cases of cardiac and pulmonary disease this affection has its course mapped out by *physical signs*, that is, certain signs given out by the altered textures, and which can be appreciated only by the well-trained ear of the experienced physician; his aid should then be sought in all such cases as early as possible, that we may have the benefit of his skill and experience in the treatment of diseases so important, and affecting such delicate and vital organs as the heart and lungs. Mercury is required in this affection as a purgative only.

(6.) PLEURISY.

This term is used to signify inflammation of the serous membrane investing the lungs, and lining the cavity of the chest. The membrane becomes dry and red at first, but soon begins to pour out a serous fluid, which ultimately fills the chest, just as we get the cavity of the body filled with fluid in the course of hepatic disease.

This affection may be ushered in by rigors, but they are neither so severe nor so constant as in the earliest stage of the preceding disease; the skin becomes hot and dry, the tongue furred, the pulse quick and hard, and the patient complains of an acute lancinating pain like the stabbing of a sharp instrument on a level, or just beneath one of the breasts; this pain is increased by inspiration, cough, and sudden movements of the body. The breathing is quick and catching, the patient being afraid to expand his chest because of the increase of pain. There is a half-suppressed, dry, ineffectual cough, or it may be accompanied by the expectoration characteristic of bronchitis, or inflammation of the lungs. The invalid cannot lie on the affected side in the earlier stage because of the pain in the chest, but in the later periods of the disease he is forced to lie on the diseased side because it is full of fluid, and so if not placed below the other lung will embarrass its movements also. When there is much fluid in the chest the respiratory process becomes very difficult and much interfered with, and the patient grows pale, and begins to flag.

Causes.—Pleurisy may be caused by local injury, and is frequently the result of lesions produced by the rough end of a fractured rib. Two or three weeks ago the author had under his care a poor old man whose chest had been ridden over by two wheels of a waggon, the sixth rib only was fractured on the left side, but the rough end of the bone so injured the membrane investing the lungs, that inflammation was soon lighted up, which speedily terminated the poor man's sufferings. This disease is frequently the immediate cause of death in women suffering from cancer of the breast. Sometimes it is due to exposure to cold and wet, and it frequently accompanies pulmonary consumption, and certain morbid conditions of the blood, as in Bright's disease, scarlatina, measles, smallpox, and typhus and typhoid fevers.

Treatment.—When due to exposure to cold and wet the hot-air bath will sometimes cut short the attack; bleeding is not generally required, but five, six, or more leeches may be applied over the diseased spot, and when taken off the whole side should be enveloped in a warm linseed poultice; opium in full doses must be given to ease the pain and keep the inflamed parts as much at rest as possible. The following pill will be found useful, quinine being added to prevent nausea and sickness :—

Take of Powdered opium, 12 grains.
Sulphate of quinine, ½ drachm.

Mix, and make twelve pills, and let one be taken twice a-day.

The skin must be freely acted upon by the use of this mixture :—

Take of Solution of the acetate of ammonia, 2 drachms.
Sweet spirits of nitre, 1 drachm.
Compound tincture of lavender, 1 drachm
Camphor water, 6 ounces.

Mix, and take two tablespoonfuls every three or four hours.

The bowels must be regulated by the occasional use of a mild purgative. The diet must be farinaceous, beef tea and mutton broth may be allowed, and stimulants if necessary. When the chest is filled with fluid, blisters applied over the affected side will favour its absorption, but they must never be used in the earlier stages of this disease. Compound iodine ointment rubbed into the chest is very useful also for the same purpose. Should the patient be getting low steel and quinine must be ordered.

Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 15 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and give a sixth part every four hours during the day.

In some few cases when fluid is poured out into the cavity of the chest, it remains unabsorbed, in fact, the chest becomes dropsical; diuretics and purgatives combined with a stimulant plan of treatment will then be necessary. The following is a useful diuretic pill, and is used in many of the larger hospitals :—

Take of Blue pill, 36 grains.
Powdered squills, 12 grains.
Powdered digitalis, 12 grains.

Make twelve pills, and let one be taken twice a day.

In some cases the chest has been tapped, but this must be done only as a last resource, as it is a very fatal operation, puriform matter being often formed within the chest from the admission of air from without. Mercury should not be used except as a purgative in the treatment of pleurisy.

(7.) Pulmonary Consumption, or Phthisis.

Consumption is a disease of the blood which shows its ravages principally in the substance of the lungs; it is due in all its forms to the deposition of scrofulous matter, called tubercle, into various organs and structures of the body.

Tubercles are composed of unorganised matter deposited from the blood; and the two following forms have been described by scientific writers: first, the yellow, friable, and opaque tubercle, having the firmness and consistence of cheese; and secondly, the miliary tubercles, which are made up of small granules, semi-transparent, of a bluish-grey colour, and as hard as cartilage—they are found diffused throughout the diseased organ. This scrofulous matter is deposited most frequently in tissues connecting other more important and vital structures, as in the connective tissue between the lobules of the lung; it is often deposited, too, on the surface of mucous membranes, as in that lining the intestines; hence we so often have diarrhœa as one of the symptoms of this disease, the bowels being irritated by the tubercular matter which has been deposited in the lining membrane.

When we were describing inflammation of the lungs, we stated that that disease attacked the lower lobes generally, and frequently preferred the right lung to that on the left side of the body; but in the disease now under consideration, the apices, or upper lobes, and their back parts especially, are the parts usually affected; and some physicians maintain that the left lung is more liable to the deposition of tubercle than the right, while others think that both lungs are equally liable to be attacked by this disease.

Pulmonary consumption creeps upon a patient very insidiously: he begins to feel weak and languid, his appetite fails him, and his digestive organs are out of order; he has slight cough, which is only occasional, occurring principally in the morning when he gets out of bed; it is usually dry at first, but soon becomes attended with expectoration of mucus. As the disease advances these symptoms increase, and the expectoration becomes altered in character, being frequently streaked with or composed of pure frothy blood, due to the giving way of small vessels at various stages of the disease. It becomes more purulent, and formed into grey, globular, flocculent masses, having the appearance of wool, and when spat into an empty vessel, it assumes the circular and flattened form of pieces of money, and hence called by the French *nummular sputa*. This kind of expectoration, and that consisting of pure, frothy, bright red, arterial blood, are most characteristic of this frightful malady, providing there be no disease of the heart obstructing the flow of blood through the lungs, the uterine function be healthy, and there be no blow upon the chest causing hæmorrhage by mechanical injury to the lung itself. A great deal of faith is placed by patients upon the degree of buoyancy of the expectorated matters when placed in water; thus they suppose if the sputum floats that the disease from which they are suffering is of a harmless character; but if it sinks that their case admits of little or no hope. The truth is this, that the mucopurulent matter if raised with difficulty, is mixed with a large proportion of air, and will be more buoyant than that which is easily expectorated and unmixed with air. Many years ago, it was thought that the expectoration of this disease could be distinguished by its consisting of puriform matter; but since then it has been most clearly proved that the mucous lining of the air passages may secrete pus itself under the influence of the inflammatory process. Besides cough and expectoration, we soon get difficult and hurried breathing; the pulse becomes permanently quickened, and the temperature of the body, as measured by the thermometer, has been proved by Dr. Ringer to be elevated in proportion. The patient begins to waste and suffer from hectic fever and night sweats, the tongue becomes morbidly red, and the bowels much purged. In a large proportion of cases, ulceration goes on in the organs of speech, as may be readily detected by means of the laryngoscope, an instrument consisting of two plane mirrors, one of which is fastened on to the forehead to reflect the light into the patient's mouth, and the other attached to a handle is placed against the back part of the throat, and draws an inverted representation of the upper part of the organs of respiration and the vocal cords, by the vibration of which we are enabled to speak and make ourselves understood. At various periods of this disease a stitch or pain in the affected side is caused by inflammation lighted up in the serous membrane covering the diseased part of the lung. The disease having reached its last stage, the patient has become much emaciated: his bones seem in danger of pricking through his skin, swelling of the legs and puffiness of the hands and face often set in, the teeth are dry and black, the lips and tongue parched, and the patient gradually sinks under the weakening power of this dreadful disease. During the later stages the monthly periods cease to recur in women, the hair falls off, and the eye becomes less sensitive. In many patients of consumptive habit the ends of the fingers are rounded and clubbed, and the nails small, flattened, triangular, and bent inwards. The late Dr. Theophilus Thompson describes a festooned line of redness as occurring on the edges of the gums of such patients.

The average duration of consumption is about two years; but there is an acute form beginning like inflammation of the lungs in the lower lobes, and so closely resembling that disease in its general symptoms and physical signs, that it often escapes the observation of the inexpert or careless observer. This is called popularly "galloping consumption." During last winter, the writer met with the case of a young man, twenty-three years of age, who was supposed by his medical attendant to be suffering from an acute attack of inflammation of the lungs; but the disease ran a rapid course; bloody expectoration was thrown up, and the patient died within three months after his first application for medical advice, having suffered from cough, difficulty of breathing, hectic fever, night sweats, quick pulse, and all the symptoms due to the deposition, softening, and expulsion of tubercular matter.

Again, consumption may prove fatal in the course of only a few minutes by hæmorrhage, due to the rupture of some large pulmonary vessel. Two years ago, the author was called up at night to a young girl, nineteen years of age, who had been suffering from all the symptoms of consumption for some months past. She had been spending the evening out, and on arriving at her own home she experienced a tickling sensation in her throat and chest, and a feeling of faintness. She then coughed up a large quantity of frothy, florid, bright red, arterial blood, and sat dead in her chair upon his arrival. Other cases have been known to extend over a period of eighteen to twenty years. This disease may occur at any age, contrary to the popular notion, which is that it attacks only the young. It is most common between the ages of twenty and thirty, then between thirty and forty, and forty and fifty; and the number of deaths annually registered as due to consumption is about the same between the respective ages of fifteen and twenty, and fifty and sixty. In the provinces more women than men die from its effects; but this order of things is reversed in the crowded streets of London.

Causes.—The main foundation of this disease rests upon the scrofulous diathesis, which may be in a slumbering state for years, but is ready to be called into action at any moment which may prove favourable to its further development; thus many cases of confirmed consumption date back to an ordinary attack of catarrh, or bronchitis. Those persons whose parents have been manifestly scrofulous before them will be more predisposed to it than the children of healthy ancestors, consumption being pre-eminently an hereditary disease; and, therefore, this predisposition is carefully inquired into by all insurance offices. If both parents be strumous, the child will be doubly so; we therefore see the necessity of avoiding unsuitable marriages. Dr. Watson, in his admirable work on the "Practice of Physic," which is, and has been for many years past, the text book both of students and medical practitioners, speaks well on this subject in the following passages:—"It is reasonable, however, to conclude—and the conclusion is amply borne out by the observation of facts—that where both parents are strumous, the child will, in all probability, be doubly so; or that, at any rate, its chance of escaping the scrofulous disposition will be small. It is very desirable, therefore, that correct notions on these subjects should be generally prevalent; and that persons who are conscious that scrofula in any of its shapes exists in *their family, and à fortiori* they who know that it exists in their own *corporeal frame, should* avoid allying themselves with persons who are in the same predicament; and this prudence might be enforced if they could be made to foresee the suffering and the misery its neglect is calculated to inflict upon their offspring. Intermarriages of persons of the same family, when that family is subject to tubercular disease, are earnestly to be deprecated."

Irritant substances applied directly to the lungs themselves may set up an unhealthy action, and tend to arouse the disease in persons by nature predisposed to it, but are not in any way capable of causing the deposition of tubercle. Such occupations as those of stonemasons, miners, and knife and razor grinders, ought to be avoided, or wholly given up by persons of this diathesis.

Nearly every author agrees that consumption does not spread by contagion; but, of course, the room in which a patient is lying in its later stages is rendered very unhealthy for any other person to inhabit. No one should be allowed to sleep in the same bed or occupy the same chamber in which such a patient is lying. As the disease makes progress from bad to worse, the patient's breathing becomes much affected: he is unable to expel as much air from his lungs after a deep inspiration as he formerly could do when in an apparent state of health—that is, his *vital capacity* is diminished. But this part of the subject has already received due consideration when on the subject of Respiration, in the former part of the work.

Treatment.—The treatment of consumption may be divided into that which is preventive, and that which is curative; the former being the more useful of the two divisions.

Preventive treatment.—Persons predisposed to consumption should live in a mild and dry climate; they must avoid all things which have a tendency to debilitate the system, such as late hours, intemperance, and excessive mental and bodily exertion; due attention must be paid to cleanliness and warm clothing; they should take moderate exercise in the open air, and employ their minds with a little easy reading.

Curative treatment.—When consumption has manifested itself by decided symptoms, the patient should be sent, if possible, for a long sea voyage, or he should migrate to a warmer, drier, and more equable climate, as that of Madeira. Hastings, Torquay, Clifton, and Penzance, which are closer home, form very favourable residences and climates for persons of this habit. Algiers, too, has been recommended strongly for such persons. When the lungs are already much broken down, and are still rapidly becoming disorganised, the patient should not be sent away, leaving his friends and the comforts of his own fireside to die in a distant part; but must be treated to the best of the means at his own home. He should be placed on a nutritious, but unstimulating, diet, and allowed plenty of milk, good meat, and fresh vegetables. Cod-liver oil gradually increased from 1 drachm to half-ounce doses will be very useful, diminishing the frequency of the pulse, easing the cough, and checking the *colliquative* diarrhœa, as it has been called, from the patient appearing to melt away under its *lowering* influence. The various preparations of steel combined with quinine and stimulants have been much used of late, and attended with a fair share of success.

Take of Ammonio-citrate of iron, 1 drachm.
Compound spirits of ammonia, 1½ drachm.
Salicine, ½ drachm.
Pure water, 8 ounces.

Mix, and let one-eighth part be taken three times a day.

Or, Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 10 grains.
Dilute sulphuric acid, 1 drachm.
Distilled water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

Iodide of potassium has been used largely in the treatment of consumption; but the iodide of iron is to be preferred, especially in combination with cod-liver oil. The author has been accustomed for some long time past to order the following medicine for hospital patients having a tendency to tubercular deposition:—

Take of Cod liver oil, 1 drachm, and
Syrup of iodide of iron, ½ drachm.

Mix them together, and take a dose thus prepared three times a day.

(This preparation of iron, if mixed with water, soon becomes oxidised, and its virtue lost, so that it should in all cases be mixed just before taking it.)

When the cough is severe, some form of sedative will be needed.

Take of Paregoric, 2 drachms.
Ipecacuanha wine, 1½ drachm.
Tincture of squills, 1 drachm.
Distilled water, 6 ounces.

Mix, and give a sixth part every four hours, or when the cough is troublesome.

Or, Take of Laudanum, 1 drachm.
Mucilage of gum arabic, 6 ounces.

Mix, and let a sixth part be taken three times a day.

The hypophosphites of iron have been well spoken of as remedies in this disease; but on being tried on a larger scale have been found to have no advantage over other remedies.

When the night sweats are very profuse, and the patient's dress is literally drenched with the acid perspiration, the following pill, which has been recommended by Dr. Barlow, will be of great benefit:—

Take of Sulphate of zinc, 6 grains.
Extract of henbane, 24 grains.

Mix, and divide into six pills, and let one be taken every night.

Should the expectoration become bloody, strong astringents and sedatives must be given, so as to constringe the vessels of the lungs.

Take of Acetate of lead, 7 grains.
Dilute acetic acid, ½ ounce.
Laudanum, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken every two hours till the bleeding ceases.

Or, Take of Gallic acid, 1½ drachm.
Dilute sulphuric acid, 2 drachms.
Pure water, 8 ounces.

Mix, and let an eighth part be taken every four hours.

The diarrhœa must be checked by the ordinary chalk mixture, or a pill containing sulphate of copper, or nitrate of silver combined with opium.

Take of Prepared chalk, 2 drachms.
Powdered gum acacia, 2 drachms.
Tincture of catechu, 1½ drachm.
Laudanum, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken every three or four hours.

Or, Take of Sulphate of copper, 3 grains.
Powdered opium, 3 grains.
Extract of gentian, 12 grains.

Make six pills, one to be taken three times a day.

During all the stages of this disease the digestive organs will suffer more or less, and they must be brought into healthy action by the appropriate remedies for indigestion. A glass of rum and milk every morning directly on getting out of bed is a capital thing, and one to be recommended to every consumptive patient. Persons suffering from this disease, or who are delicate in the chest, may drink cocoa made with milk, instead of coffee or tea, as it contains a large amount of soothing and nutritious matter.

(8.) INFLUENZA.

Influenza is an inflammatory disease affecting the mucous membrane of the air passages, and resembles in its nature and symptoms ordinary catarrh, but is marked sooner by the occurrence of acute febrile disturbance, and spreads by contagion, affecting large tracts of country by its epidemic seizures.

The patient is chilly and cold, and has distinct rigors, with headache and tightness across the chest; his eyes begin to water, and he is troubled with sneezing, and a copious defluxion from the nostrils; his voice grows thick and hoarse; he suffers from difficulty of breathing and cough. With all these symptoms, which are those of ordinary catarrh and acute bronchitis, there is a great loss of strength; the patient is worn out at the very commencement of the attack, and, as previously stated, febrile symptoms show themselves at a very early period; the tongue is furred, the pulse quick, nausea and vomiting present themselves, and in some cases diarrhœa is added; the muscles and limbs are tender and painful, as if the patient had been beaten and bruised all over. In an ordinary way the disease runs its course in about six or seven days, but is sometimes protracted by being complicated with bronchitis, or inflammation of the substance of the lungs.

Causes.—Various have been the hypotheses framed to account for the capricious onset and retreat of this interesting affection. Some scientific writers suppose it to be due to the accumulation of electricity in the atmosphere, or to an excessive quantity of *ozone*, which is a gaseous body allied to oxygen, and present in small quantities in the atmosphere in which we live; it may be produced artificially by passing a succession of electric sparks through atmospheric air, or dry oxygen gas; it is produced also by the slow oxidation of many substances, as phosphorus, æther, and turpentine. Others maintain that it results from the diffusion of myriads of animalcules and vegetable germs through the air, and their being brought into contact with the tissues of the lungs with the air inspired during the process of respiration.

Influenza is more fatal to elderly people than to those who are yet in the prime of life. It resembles cholera in always taking a course from east to west, and in many other interesting points, which will be considered when treating of epidemic cholera and diarrhœa.

Treatment.—Bleeding must not be practised in this disease, as it is of so lowering a character in itself that its most troublesome feature is the complete prostration in its earliest stage, in this point resembling an attack of continued fever. During the first day or two the treatment of catarrh will be all that is necessary; the patient must be confined to bed in a warm room, the bowels acted upon by a gentle aperient, and the skin brought into action by saline and diaphoretic medicines.

Take of Solution of acetate of ammonia, 2½ drachms.
Sweet spirits of nitre, 2 drachms.
Tincture of henbane, 1½ drachm.
Camphor water, 8 ounces.

Mix, and give an eighth part every four hours.

The diet should consist of slops—beef tea, broth, gruel, and arrowroot. The cough may be relieved by stimulating expectorants if no part of the lungs become involved in the inflammatory process, besides those affected by the epidemic disorder; thus the following mixture will be found of use:—

Take of Paregoric, 2 drachms.
Tincture of squills, 1 drachm.
Ipecacuanha wine, 1½ drachm.
Mucilage of acacia, 6 ounces.

Mix, and let two tablespoonfuls be taken every three or four hours.

In cases of great prostration the powers of the system must be supported by wine, beef tea, mutton broth, and ammonia.

Take of Carbonate of ammonia, 24 grains.
Decoction of cinchona, 8 ounces.

Mix, and give an eighth part every four hours.

When the disease has reached its termination, and the patient, as in all cases he will be, is left feeble, broken down, prostrate, and languid, steel and quinine will do good.

Take of Sulphate of quinine, 18 grains.
Sulphate of iron, 12 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.
Compound tincture of lavender, 1 drachm.

Mix, and let a sixth part be taken three times a day.

If the breathing should become very difficult, turpentine stupes and mustard poultices may be applied to the chest, but mercury and blisters are seldom or never needed.

If the symptoms of acute inflammation of the respiratory organs set in as previously described under the respective diseases, the aid of the medical man should be promptly sought, and the remedies for the peculiar inflammatory attack present be administered under his guidance, and strictly according to his directions.

(9.) Hay-asthma, or Hay-fever.

Closely associated with catarrh and influenza is that peculiar disease of the air passages due to irritation set up by the contact of particles of finely divided hay. Dr. Elliotson, who has written on the subject, considers it to be a mixture of ordinary catarrh and asthma; it is attended with watering of the eyes and nose, tightness across the chest, cough with mucous expectoration, difficulty of breathing, and sneezing. It occurs to certain persons only, being an uncommon disorder, but recurring in them as the spring returns, when the rich meads and pastures are being spoiled of their valuable produce to form hay for use during the ensuing autumn and winter. Mr. Gordon, who has studied this disease somewhat closely, supposes that the odoriferous particles arising from the *Anthoxanthum odoratum*, or sweet-scented vernal grass, are the exciting cause of this peculiar affection.

Treatment.—The chief feature in the treatment of this disease is, having made an early and correct diagnosis, to advise the sufferer to remove from the source of infection—to spend a few weeks at the seaside during the merry season of "haymaking." This disease appears sometimes to run in families; its pathology does not seem to have led to a very decided and successful plan of cure, various remedies having been recommended by different observers. Mr. Gordon advises a trial of the *Lobelia inflata*, which may be thus given:—

Take of Tincture of lobelia, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

Dr. Elliotson recommends a tonic plan of treatment, especially the iron and quinine mixture; and he thinks that rags dipped in chloride of lime and suspended in various parts of the house prevent the violent action of this vegetable irritant.

Dr. Watson thinks some good might be derived from the constant use of a respirator. In a disease of this kind, which is, of course, but little seen by the body of medical men at large, it is very difficult to determine upon the most satisfactory method of treatment, from the small share of experience that the rarity of its occurrence presents us with, happening at one season of the year only, and then not affecting a large number, but annually recurring in the same patient, who naturally consults his own medical attendant.

(10.) CANCER OF THE LUNG.

Like most of the other organs of the body, the lungs are subject to cancerous deposit, which may be primary or secondary, that is, the cancerous disease may begin in these organs, or having begun in some distant part the morbid fluid becomes conveyed by the blood to the lungs, where another cancerous mass is in turn formed. Cancer of the lung is a rare disease. The symptoms attending it will be principally those of debility, such as pain, loss of power, emaciation, night sweats, hectic fever, cough with expectoration of blood and purulent matter, often of a fœtid odour. Nothing can be done with a view of curing this affection; but, as in other forms of cancer, the patient's health and strength must be propped up by a nutritious and stimulating diet—he must be supplied with wine, and all kinds of delicacies, and sleep must be procured for him, and his pain relieved by the use of sedatives and narcotics; ten or fifteen drop doses of laudanum may be given at intervals, and the following pill at bedtime:—

Take of Hydrochlorate of morphia, ¼ grain.
Confection of roses, 3 grains.

Make one pill, and repeat it every night.

Symptoms must be treated as they arise; sickness must be relieved by sucking ice, and by the administration of the following medicine :—

Take of Compound spirits of ammonia, 1 drachm.
Hydrocyanic acid (Pharmacopœia), 6 drops.
Pure water, 6 ounces.

Mix, and take a sixth part every four hours.

Diarrhœa must be checked by the use of astringent draughts, thus :—

Take of Prepared chalk, 2 drachms.
Powdered gum acacia, 2 drachms.
Tincture of catechu, 1½ drachm.
Tincture of opium (laudanum), 1 drachm.
Distilled water, 6 ounces.

Mix, and give a sixth part every three hours.

Or, Take of Dilute sulphuric acid, 1½ drachm.
Laudanum, 1 drachm.
Pure water, 6 ounces.

Mix, and take a sixth part every three or four hours.

Should the expectoration be mixed with much blood, ice may be sucked down, and astringents given, as recommended under the head of Pulmonary Consumption.

Take of Acetate of lead, 10 grains.
Acetic acid (diluted), 2 drachms.
Laudanum, 1 drachm.
Pure water, 6 ounces.

Mix, and give a sixth part every four hours, till the hæmorrhage ceases; or gallic acid may be tried in eight or ten grain doses, mixed with pure water and dilute sulphuric acid.

Besides this form of cancer of the lung, there is yet another, in which the disease consists of a soft coloured matter, either formed into large tumours, or diffused through the substance of the lungs; this is termed by pathologists *melanosis of the lungs.* This coloured cancer—for it is considered to be a variety of the medullary or soft form of cancer—may be deposited in other organs besides the lungs; thus, it has been found in the eye, liver, and brain, and it usually affects several organs at the same time. There are no peculiar symptoms of this affection, nor is there any ascertained mode of cure.

There is another morbid condition of the lungs closely resembling this dark-coloured cancer, called *spurious melanosis ;* it occurs in the persons of men who are in the habit of breathing an atmosphere thickly loaded with carbonaceous particles, as miners, coal-heavers, stokers, and moulders; it is accompanied by cough and black expectoration during life, and the lungs are found after death to be infiltrated with a dark-coloured material, from which Dr. Christison was able to obtain the ordinary products of the distillation of coal.

This spurious affection is distinguished from true melanosis by its occurring only in men who are constantly breathing a carbonaceous atmosphere, and by its never affecting any other organ than the lungs.

(11.) CLERGYMAN'S SORE THROAT, OR DYSPHONIA CLERICORUM.

This is in some cases a nervous, but in others an inflammatory disease affecting the throat of men who are in the habit of speaking much, and so most frequently met with in clergymen, public speakers, singers, and actors. It consists of inflammation, and relaxation of the mucous membrane lining the back part of the mouth, the soft palate, and fauces; the tonsils are somewhat enlarged, and the uvula elongated. There is an uneasy sensation in the throat, as if something were lodged there, and the patient is constantly trying to swallow it; the voice is weak, thick, and hoarse, and in some cases scarcely audible. In many cases cough harasses the patient, being attended with expectoration of mucus.

Treatment.—If upon examining the throat we find no signs of inflammation, we should recommend change of air and scene to the patient, and tonics must be given, as quinine and iron, and the cold shower bath will be found useful.

Take of Sulphate of iron, 16 grains,
Sulphate of quinine, 12 grains.
Dilute sulphuric acid, 1½ drachm.
Compound tincture of lavender, 1 drachm.
Pure water, 8 ounces.

Mix and let an eighth part be taken three times a day,

In some few cases, when other remedies have failed, bichloride of mercury has been successful, and may be given thus :—

Take of Bichloride of mercury, 2 grains.
Powdered opium, 5 grains.
Confection of roses, 2 scruples.

Mix, and divide into sixteen pills, one of which must be taken night and morning.

Liberal diet must be allowed, including wine and malt liquors; and the nervous patient should mix freely in society, resting for a short time from his vocal exertions. The organs of voice may be *swabbed* with a solution of nitrate of silver, containing 1 scruple of this salt to an ounce of distilled water: for this purpose a camel's hair brush should be used, which is made in the form of a right angle towards its end, and which, by a little careful manipulation, may be gently directed down upon the vocal cords. When the tonsils are inflamed, a warm linseed poultice may be applied to the throat, and the following gargle used:—

Take of Dilute sulphuric acid, 3 drachms.
Compound tincture of lavender, 2 drachms.
Pure water, ½ pint.

Mix, and make a gargle to be used frequently.

After using this application, the mouth should be freely rinsed out with cold water to prevent the acid exerting an injurious influence upon the teeth. If the tonsils be in a chronic state of inflammation and enlargement, they may be removed by the knife of the surgeon.

(12.) Quinsy, or Tonsillitis.

This is a very common disorder, consisting of inflammation of the tonsils, uvula, and soft palate; if it penetrate beyond the mucous membrane it is apt to end in suppuration. It recurs from time to time; and when the inflammatory action runs high, extends to the neighbouring salivary glands. On looking into the mouth, the tonsils, uvula, and fauces are seen to be red and swollen; sometimes numerous white patches are noticed upon the surface of the tonsils, having the appearance of little ulcers. There is great difficulty experienced in swallowing, and it is attended with acute pain; the eustachian tube leading from the back part of the throat to the ear becomes stopped up, and causes partial deafness; the breathing is not affected, except in the worst cases. This disease occurs most frequently in the young and plethoric, and some persons seem naturally predisposed to it; and it is noticed to run in certain families.

Causes.—Its most frequent cause is exposure to cold and wet; sometimes it assumes an epidemic form, attacking many persons in a comparatively short space of time; but it does not spread by contagion. It very rarely proves fatal, but runs its course in nine or ten days. In some rare instances it has extended into the organs of voice, and assumed a much more serious character.

Treatment.—The patient should be kept in a warm room, and placed on broth diet, as it is impossible for him to swallow any kind of solid food: he may take beef tea, arrowroot, gruel, and tapioca made with milk; the bowels must be regulated by mild purgatives, and a linseed poultice applied to the throat; in some cases a camphor liniment does good. Steam of hot water should be inhaled; and currant jelly may be sucked down to act as a stimulus to the relaxed mucous membrane. This affection is often constitutional, depending upon a low state of health, and then requires supporting treatment. Wine must be freely allowed, and some form of iron prescribed; and this drug will be rendered more useful by combining it with chlorate of potash, which seems to have almost a specific action upon diseases of the throat.

Take of Powdered chlorate of potash, 1½ drachm.
Tincture of perchloride of iron, 2 drachms.
Dilute hydrochloric acid, 1 drachm.
Pure water, 8 ounces.

Mix, and let one-eighth part be taken every four hours.

When suppuration has set in, and puriform matter is collecting in the substance of the tonsils, they must be punctured, or the breathing will become much interfered with. In all cases of quinsy in which the inflammatory symptoms are severe, we must guard against its extending into the air passages, for then we have a comparatively harmless disease converted into one which is most pernicious to life, as we shall see when considering acute inflammation of the larynx.

Mr. Joseph Bell, of Barrhead, recommends powdered guaiacum to be given internally, and I have seen this drug used in hospital practice with apparent advantage.

Take of Powdered guaiacum, 2 drachms.

Divide into six powders, one of which is to be taken three times a day.

When the tonsils become permanently enlarged, hindering deglutition, respiration, and the power of speech, they should be painted with a solution of nitrate of silver every morning; or they may be smeared over with tincture of iodine once a day. Should these remedies prove useless, as they will frequently do, these organs must be removed by the surgeon, either by a blunt-pointed bistoury, or by an instrument called the *guillotine,* which consists of a metallic loop to receive and fix the tonsil, while a blade is pushed up by the thumb to cut through its substance. During the last year it has been proposed to reduce the bulk of these glandular bodies by touching them with caustic potash, which acts as a powerful escharotic. A few weeks since we watched with interest the case of a girl, thirteen years of age, in which this remedy was applied to both tonsils. Deep sloughs were formed, and upon their gradually contracting and healing, the enlarged tonsils were much lessened, and the patient expressed herself as being greatly relieved.

(13.) INFLAMMATION OF THE LARYNX, OR LARYNGITIS.

The larynx is the upper part of the windpipe, and composes the organs of voice; it is formed of several cartilaginous pieces bound together by ligaments, and acted upon in various ways by little muscles; it is subject to both acute and chronic inflammation.

Acute inflammation of the larynx is a rare disease; and as croup is essentially an infantile disease, so this is confined to the period of puberty. The inflammation is not confined to the larynx, but extends to the soft palate, tonsils, and uvula, so as to occasion difficulty in swallowing in addition to the following symptoms: the patient is anxious and restless, the act of inspiration is long, protracted, and stridulous, and that of expiration is accompanied by wheezing; he has a husky, stridulous cough, and great difficulty of breathing; all the patient's misery seems in his throat, and his larynx is painful and tender to the touch. The voice is either hoarse or completely lost, *so that the patient can* speak in a whisper only; his face becomes flushed and his tongue furred; the pulse rises in frequency, and is hard and resisting. As the disease goes on, great changes come over the patient: his face becomes pale, his lips and hands livid, and he is anxious and ghastly; and if no relief be given, he soon dies by a slow process of strangulation. This disease is readily distinguished from quinsy by looking into the throat, when nothing will be seen to account for the difficulty of swallowing and breathing.

Causes.—This disease may be the result of mechanical injury, or of some morbid condition of the blood: thus, it may be due to swallowing hot water, mineral acids, and the fumes of ammonia, or to injury done by the careless introduction of the tube of the stomach pump. It sometimes arises from exposure to cold, and at others the inflammatory action extends from the tonsils. It frequently comes on in the course of the exanthemata, or contagious diseases, as erysipelas, measles, small-pox, and scarlet fever.

Treatment.—If the disease be due to cold, place the patient in a hot bath, and let him rest in bed in a room, steadily maintained at a temperature of 65°. He may inhale steam, and the air of the sick chamber should be moistened by diffusing steam through it. His feelings will be much relieved by the application of a hot sponge to his throat, and the following medicine must be regularly persevered in:—

Take of Ipecacuanha wine, 30 drops.

Mix them with a little water, and give a draught thus prepared every half hour till the patient vomits.

Mercury and blisters are of no use in this disease, having no time to act; blood may be locally abstracted by the application of a few leeches to the neck. The diet must consist of strong beef tea and mutton broth, and as soon as the powers of the patient begin to flag, stimulants must be promptly administered.

Take of Carbonate of ammonia, ½ drachm.
Pure water, 8 ounces.

Mix, and take an eighth part every two or three hours.

When the patient seems to have but little chance of relief from the above line of treatment, the aid of the surgeon should be sought, who will, if he deem it expedient, perform an operation, technically called *tracheotomy*, which, if done early, will afford good hopes of success; for the obstruction being high up above the windpipe, an artificial opening is made below it, and air rushes in through this newly-made entrance to the lungs, and affords instant relief to the sufferer. We have ourselves seen several cases in which this operation was attended with the best results, having, as it were, snatched the patients from the very jaws of death.

Chronic inflammation of the larynx.—Besides being subject to acute inflammation, as described above, the larynx often becomes thickened, and its cartilages necrosed by the prolonged action of chronic inflammation. This form is seen most frequently in consumptive patients, and in persons of a weak and delicate constitution. During the weary course of pulmonary consumption, as stated when considering that disease, the larynx often becomes thickened, inflamed, and ulcerated, and the voice thick and hoarse; and in severe cases altogether lost. This state of things may be relieved by *swabbing* the affected organ with a strong solution of caustic, containing 1 scruple of this salt to an ounce of distilled water, and by persevering in the other remedies to improve the condition of the general health, such as cod-liver oil and various salts of iron and sulphate of quinine.

In certain cases, the mucous membrane of the larynx is thickened and ulcerated, and the voice consequently much impaired. The organ should be smeared as before with the solution of caustic, and the voice rested. Two or three leeches may be applied over the diseased part; and if the mucous membrane be much relaxed, tannic acid will be found useful. Mercury in some form is frequently of great benefit to the patient.

Take of Calomel, 24 grains.
Powdered opium, 6 grains.
Confection of roses, 18 grains.

Beat into a mass, and divide into twelve pills, one of which should be taken twice a day, morning and evening.

With these pills may be taken the following mixture containing iodide of potassium:—

Take of Iodide of potassium, ½ drachm.
Bicarbonate of potash, 2 scruples.
Decoction of cinchona, 6 ounces.

Mix, and take two tablespoonfuls three times a day.

In some cases of chronic inflammation of the larynx, the patient becomes much troubled with difficulty of breathing, suffocative cough, and expectoration of puriform matter; and these symptoms in extreme cases will soon lead to a fatal termination if not artificially relieved. The advice of the surgeon should at once be sought, and if he think it expedient, he will be able to relieve the sufferer by making an opening into his windpipe, through which he may breath the air that has been refused admission by the swollen parts above.

(14.) CROUP, OR CYNANCHE TRACHEALIS.

Croup consists of inflammation of the mucous lining of the windpipe, which is a continuation downwards of the larynx; it occurs most frequently in male children, and the second year is the usual period for its attack. It is essentially a disease of infants; and inflammation of the larynx, as has been previously stated, is peculiar to adults. Why inflammation should be limited, or generally found in the windpipe in the one case, and confined to the larynx in the other, it is difficult to say; for although croup may affect the larynx in some *cases, still it* has its origin in the windpipe. Croup is peculiar, too, *in another respect—viz.,* that, contrary to the usual process of inflammation affecting mucous tissues, there are false membranes formed resembling those produced by the serous membranes under the action of inflammation, but differing from them in being more albuminous, more brittle, and less fibrous, and in not becoming organised and developed into permanent structures of the organism.

Croup comes on with the ordinary symptoms of catarrh: the child is said to have a "cold," he begins to sneeze and cough, the eyes and nose pour out abundant secretions, and the voice becomes gruff and hoarse, and this is a symptom which should always arouse suspicion on the part of the anxious mother; the little patient is feverish, his tongue is white and furred, the pulse becomes frequent and hard, and the breathing more and more difficult, and attended with a "crowing" inspiration; the face is flushed, and the skin hot and dry. The cough is of a ringing, brassy, metallic character, adding to the distress caused by the above detailed symptoms. As the disease makes progress—as it rapidly will do unless cut short by active antiphlogistic treatment—the child's powers begin to fail, his skin becomes cold and blue, his face livid and expressive of great anxiety and distress; the cough loses its metallic character and becomes much less noisy, and the voice ceases to be audible. As it is drawing to its close, the little patient thrusts his head back, the eyes become prominent and staring, and the pupils dilated, the nostrils are widely opened, drowsiness supervenes, and the child struggles for his breath, and gradually sinks, being exhausted by this slow process of strangulation, and narcotised by the circulation of non-aërated blood.

This affection usually comes on in the middle of the night: the child is put to bed apparently in good health, but wakes towards morning with the characteristic inspiration. It resembles inflammation of the larynx in running a very rapid course, being sometimes fatal within the twenty-four hours.

Causes.—Croup is not contagious, though it often appears about the same time in two or more children of the same family placed under the same influences. We recollect well, when engaged in active practice in the flat and low-lying county of Lincolnshire, two gipsies presenting themselves one evening in the surgery (as we are accustomed at all times to be kind to this race of people), each bearing a child suffering from this disease, one being already in a sinking state. These two children, belonging to different parents, had contracted the disease at or about the same time, being placed exactly under the same circumstances; and we need not have recourse to the contagious theory to explain the occurrence of such cases. During the same night, the author was called up to a poor woman in labour at a small house not far distant in the town, and upon being taken upstairs, heard the crowing inspiration so characteristic of croup issuing from an adjoining room. It was at once inferred that the two poor gipsies with their invalid children had taken refuge there for the night, and upon inquiry this inference proved to be a true one. Thus we see how easy the disease is to be recognised; and this is important, as medical aid will be of no service unless brought to bear upon the disease in its very commencement. This affection of infants is most rife in damp and low places, such as the banks of rivers, and occurs most frequently during the damper and colder seasons of the year. It is frequently seen in the children of washer-women, from the damp air which they are in the habit of breathing. Like quinsy, it is very apt to recur, so that a child who has once had an attack of croup, requires to be carefully guarded against its exciting causes. Croup is a very fatal disease; but the mortality has of late years been much diminished by the advance made in treatment. Formerly four out of five children used to die; and even now one-half attacked by it fall victims to its grasp. Croup must be distinguished from inflammation of the upper part of the gullet: for in some cases of this disease the air passages become so pressed upon as to render the breathing difficult; but on looking into the throat we recognise at once the cause: in croup there is no difficulty in swallowing. It is easily distinguished from the spurious form of croup, described below, by the absence of all inflammatory and febrile disturbances in that disease.

Treatment.—Croup requires nearly the same treatment as that recommended in acute inflammation of the larynx, only modified in proportion to the difference of the respective ages of the patients affected in each disease. The child should be put at once into a hot bath, and after being kept there for a few moments, should be wrapped in a blanket and put to bed in a room gently heated and steadily maintained at a temperature of 65°, and steam should be freely diffused through the atmosphere. Vomiting must be excited, and a state of nausea constantly kept up by the following dose:—

Take of Ipecacuanha wine, 20 drops.

Mix them with a little water, and give a dose thus prepared every twenty minutes until the child vomits, and then repeat the dose every hour or two till the little patient has recovered.

The above formula is intended for a child two or three years old, and must be increased or diminished in strength according to the age of the patient under treatment. The diet must be bland and nourishing, consisting of milk in the early stage, and beef tea and broth in the latter. When the disease has further advanced, and the child's powers of life are fast failing, depressing medicines are no longer required; but stimulants will be necessary, and a little brandy mixed with water. Mercury and blisters should not be used; for the disease runs on so rapidly that they will have no chance of acting. The little patient should not be bled; but two or three leeches may be placed on the neck with a view of relieving the local congestion. Tracheotomy, or making an artificial opening into the windpipe, is not so successful in this disease as in laryngeal inflammation, for false membranes are formed the whole way down the windpipe; but in a few cases it has been successful, when there were either no adventitious membranes produced, or where they were limited to the upper part of the windpipe and larynx.

(15.) Bastard Croup, or Laryngismus Stridulus.

This is a disease of a nervous character, closely resembling in its symptoms and mode of attack the true form of croup; it occurs quite suddenly during the night, the child wakes up and is unable to inspire, it struggles for breath, and at last the act of inspiration is performed with a whistling or crowing sound. It has been variously named by different writers: some call it *spasmodic croup*, others *child-crowing*, and Dr. Mason Good gave it the pedantic title of *laryngismus stridulus*. This affection is due to the spasmodic contraction of the small muscles guarding the entrance of the larynx and windpipe, and unless this spasm be in due time overcome, the little patient falls lifeless upon its nurse's lap, but more commonly the spasm, after lasting for a few seconds, relaxes, and the child is released from its sufferings and danger. This spurious affection may be distinguished from true croup by the absence of all inflammatory and febrile symptoms. Dr. Ley thought this disease was due to some pressure by enlarged glands upon the pneumogastric nerve, which is the source of the nervous supply to the tissues of the lungs. Others think it due to irritation in distant parts of the body, such as dentition, and cutaneous eruptions on the face and scalp.

Treatment.—The cause must first be sought out, and then, if possible, removed; the bowels must be regulated by gentle aperients, and the little patient allowed plenty of fresh air. During the violence of the paroxysm, the hot bath will be of service, and the face and chest may be freely sprinkled with cold water.

(16.) Diphtheria, or Diphtheritis.

This is an inflammatory affection of the throat, accompanied by low fever; it resembles croup in the fact of an adventitious membrane being produced by inflammation of a mucous surface, but differs from that disease in not being situated in the windpipe; it affects the upper part of the gullet, the fauces, soft palate, uvula, and tonsils, these parts being covered by a whitish, ash-brown membrane, of the thickness and toughness of thin leather; it may extend forwards into the nostrils, or backwards down the gullet and respiratory passages. The neighbouring salivary-glands get involved in the mischief, becoming tense, hard, and swollen. This complaint is much more common in some parts of France than in this country, where few medical men have the opportunity of watching its ravages; but we have seen many cases of it in the open and flat parts of Lincolnshire, which seem very favourable to its spread and development.

Treatment.—This disease is of so lowering a character, that no depressing plans of treatment have been adopted, although tartar emetic has been thought useful by some practitioners; we must allow from the very first nutritious and stimulating diet, plenty of strong beef tea and mutton broth, and a liberal supply of brandy and wine.

The diseased part must be smeared over with caustic every morning, and the following medicine prescribed:—

Take of Powdered chlorate of potash, 1 drachm.
Tincture of the perchloride of iron, 1 drachm.
Dilute hydrochloric acid, ½ drachm.
Pure water, 6 ounces.

Mix, and give a sixth part every four hours.

The throat should be constantly gargled with the following gargle:—

Take of Chlorate of potash, 1½ drachm.
Dilute muriatic acid, 1 drachm.
Pure water, ½ pint.

Make a gargle to be used frequently during the day.

Tracheotomy has been performed in some cases, but is rarely successful, from the morbid state of the blood, and the weak state of the patient.

(17.) HOOPING COUGH, OR PERTUSSIS.

Hooping cough sets in with the symptoms of an ordinary cold, there is a profuse secretion from the eyes and nose, and the child sneezes and coughs. The cough comes on in paroxysms at uncertain intervals, being generally more severe during the night-time, a number of expiratory efforts of coughing are made in succession, and the child turns black in the face, then a prolonged inspiration takes place with a peculiar crowing, or hooping sound, from which the disease takes its name; after several efforts of this kind of coughing, a quantity of glairy mucus is raised, and the paroxysm is at an end. Sometimes the cough is so violent as to bring on vomiting, or a fit of infantile convulsions, the face becomes red and livid, the eyes prominent and staring, and the little sufferer is left perfectly exhausted. This disease generally lasts from two to three months, and often for a much longer period. It is very contagious, and occurs but once during a person's lifetime; some cases are complicated with inflammatory affections, as bronchitis, or inflammation of the lungs, and then often prove fatal.

Causes.—Various opinions have been formed as to the true pathology of this disease. Some think it due to inflammation, others to some irritation of the brain, or pneumogastric nerve, or some of its branches, while Dr. Ley supposes that the glands of the neck become enlarged, and press upon the substance of this nerve.

Treatment.—The principles that must guide us in the treatment of this disease are the following: we must relieve all urgent symptoms as they present themselves, and guard against any inflammatory attack invading the lungs. The child must be confined to the house while the weather is still cold, and must be carefully protected by warm clothing; he should be allowed only a small quantity of meat, *his diet consisting* of milk and farinaceous food. The child may *be materially benefited* by change of air and scene, should the weather be favourable. Sedatives and tonics may be given internally, thus:—

Take of Paregoric, ½ drachm.
Solution of the acetate of ammonia, 35 drops.
Sweet spirits of nitre, ½ drachm.
Ipecacuanha wine, 40 drops.
Syrup, 2 drachms.
Distilled water, 1½ ounce.

Mix, and let a teaspoonful be taken three or four times a day.
(For a child two or three years of age.)

In many cases the daily use of emetics does good.

Take of Powdered ipecacuanha, 1 to 2 grains.

Make one powder, and let it be given morning and evening.

The cough is often much relieved by the following medicine:—

Take of Extract of henbane, 10 grains.
Powdered gum acacia, ½ drachm.
Pure water, 1½ ounce.

Mix, and give one teaspoonful three times a day.
(For a child two or three years old.)

The following liniment may be rubbed into the chest and back twice a day:—

Take of Turpentine, 3 drachms.
Opodeldoc, 1½ ounce.

Mix, and make a liniment, and label it "*Poison.*"

Bleeding is quite unnecessary. When the child's expectoration becomes profuse, astringents should be prescribed.

Dr. Gibb thinks that nitric acid is a very valuable remedy in the treatment of hooping cough, but on extensive trials by other practitioners, it has been found to possess no material advantage over other remedies. He gives it thus:—

Take of Dilute nitric acid, 12 drachms.
Compound tincture of cardamoms, 3 drachms.
Syrup, 3½ ounces.
Water, 1 ounce.

Mix, and give one teaspoonful every four hours.

At the present time, many practitioners use a mixture consisting of sulphate of zinc, and extract of belladonna, and apparently with advantage; but the latter drug requires great care and watching when given to patients of so tender an age.

Take of Extract of belladonna, 1½ grain.
Sulphate of zinc, 10 grains.
Pure water, 1½ ounce.

Dissolve the zinc in the water, and rub down the extract with this solution, thoroughly mix, and give one teaspoonful three times a day.

(The above formula is intended for a child three or four years old.)

(18.) SPITTING OF BLOOD, OR HÆMOPTYSIS.

Spitting of blood does not constitute a disease in itself, but, like jaundice, is a most important symptom, bespeaking oftentimes very severe mischief going on in the system. It is one of the symptoms of disease in two of the vital organs of the body, the heart and lungs, being more often due to disease in the latter. It is frequently almost the first symptom of that dire disease, pulmonary consumption, and, as related under the head of that affection, may sometimes be so profuse as to prove fatal in the course of a few minutes. When it appears during the course of heart disease, it betokens that the pulmonary circulation is much interfered with, and that the cardiac affection is of a severe character. In some cases of aneurism, or dilatation of the large vessels within the chest, it is the first sign of the rupture of the arterial coats, and the bleeding proceeding from so large a source, life is terminated in a very short space of time. This symptom then, being of so great importance, frequently involving questions of life and death, is treated by most scientific writers under a separate head, and we have thought fit to follow in their steps, thinking it to be the best way of bringing it before the notice of our readers; and while on its consideration, we wish to impress upon all persons who have already suffered from this affection, or symptom, to take great care of themselves, for we find that the generality of people think that once the bleeding is stopped it is of no more consequence than if the blood had escaped from small capillaries laid open by some slight injury to the finger. But we must recollect that the blood comes from the delicate vessels of organs so important as the lungs, upon the well-being of which our life, health, and strength in a great measure depend, and that it generally, if not always, points to disease that is progressive in character.

Causes.—Spitting of blood may be due to the presence of tubercle in the lungs (see the article on Consumption), or to heart disease obstructing the free flow of blood from these organs. In some rare cases it is vicarious. Thus the menstrual fluid may cease to be poured out from the womb, and then blood is frequently discharged from the vessels of the lungs. It is not unfrequently caused by mechanical injury to the walls of the chest, as blows and wounds. We have at the present time a man under treatment whose chest was ridden over by two wheels of a waggon. For two or three days after the occurrence of the accident he had spitting of blood from the lungs; but under the influence of rest and the treatment to be described, he has been restored to his usual state of health. Cancer of the lung, and the bursting of aneurismal pouches, are rare causes of this symptom.

The bleeding seldom takes place as in cerebral hæmorrhage from large vessels, but the blood usually escapes from the smaller capillaries. The disposition to spitting of blood is increased by anything which tends to excite the circulation, or to impede the action of the heart and compress the lungs; and hence the frequency of this symptom in women who lace their stays tightly round the chest, and in persons suffering from dropsy, the accumulated fluid diminishing the cavity of the chest, and exerting pressure upon the lungs, heart, and great blood-vessels. The quantity of blood spat up varies in different cases. It may be only a few mouthfuls of frothy, arterial blood, or there may be a much larger quantity, as previously related in the case of the young woman who died in a few minutes from the immediate effects of this symptom. (See article on Tubercular Consumption.)

Some persons have been known to feign spitting of blood by scratching the back part of their mouth or tongue, and by sucking blood from a decayed tooth. So the mouth and the upper part of the throat and gullet should be examined in all cases where we may suspect any attempt at deception or foul play. When bleeding from the lungs is vicarious of the catamenial secretion, it is of much less serious import, for patients have lived for many years menstruating through the vessels of the lungs. When we come to the consideration of the diseases affecting the organs of digestion, we shall find that blood may escape from the vessels of the stomach, and be vomited up through the gullet and mouth, and we shall then point out the method of deciding whether the blood comes from this organ or the lungs.

Persons predisposed to bleeding from the lungs must avoid all kinds of exertion which tend to hurry the circulation of the blood through the vessels of these organs, such as straining, running, playing upon wind instruments, and all kinds of violent exercise; and the cavity of the chest must not be decreased in area by that foolish habit of tight lacing. There are some peculiar sensations preceding the actual *coughing* up of the blood; and persons who have once suffered from this symptom tell you that they are going to have another attack, for there is a sense of weight and oppression in the chest, and the patient feels anxious and restless, and experiences a sense of bubbling in the windpipe, of heat and pricking beneath the chest bone, and a peculiar saltish taste in the mouth.

Treatment.—The bleeding must be checked as soon as possible, and its cause remedied or alleviated. In former days it was the custom to bleed in such cases; but this method of cure is now quite given up and forsaken as one of the fallacies of by-gone days. Some physicians still think that the congested vessels of the lungs may be greatly relieved by cupping, or leeching the chest; but we prefer trusting to the following means:—The patient must be confined to bed, and lightly covered over, in a cool room. Pounded ice may be applied to his chest, and cooling drinks allowed. He should not be suffered to speak, but must convey his thoughts to those around him by means of a slate and pencil. All bodily exertion and mental emotion of every kind must be prevented as far as possible. If the patient be in the habit of smoking, he must give it up, for it only tends to quicken the action of the heart, and to render him weak and faint. The diet should be simple and unstimulating, and the food for the most part should be given cold. Should he be troubled with thirst, he may be allowed any kind of acidulated drink, and to suck down a ripe orange. When all the above points—which are points of the greatest importance—have been attended to, we may prescribe with advantage some form of astringent medicine. He may inhale the vapour arising from twenty to thirty drops of pure turpentine, which acts directly upon the tissues of the lungs, and constringes their vessels. The following has been for many years a very favourite remedy:—

Take of Acetate of lead, 10 grains.
Dilute acetic acid, 1½ drachm.
Laudanum, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken every four hours.

Many physicians prescribe gallic acid, mixed with dilute sulphuric acid; and it is a very good form of medicine, and one in frequent use.

Take of Gallic acid, 80 grains.
Dilute sulphuric acid, 1½ drachm.
Pure water, 8 ounces.

Mix, and give an eighth part every four hours, previously shaking the bottle.

The mineral acids have been much praised, and, combined with tonics, may be used in later periods to give the patient's system tone and increased power. Mercury has been recommended by some practitioners, but is quite unnecessary.

(19.) EMPHYSEMA OF THE LUNGS.

By this term is meant a disease of the lungs which very frequently accompanies chronic bronchitis, and which consists essentially of dilatation of the air cells of the lungs, with or without rupture of their walls. It is attended with shortness of breath, and paroxysms of difficult breathing, occurring at uncertain intervals, resembling those of asthma. There is often a harassing cough, accompanied by expectoration of frothy, white-coloured mucus. The eyes are glistening with profuse watery secretion, and the countenance is dusky, puffy, and congested. Usually, there is no emaciation. The chest, as the disease advances, becomes much enlarged and barrel-shaped, and the body is very buoyant in water. This is the same disease as that which gives rise to all the troublesome symptoms in broken-winded horses.

Causes.—This affection may be congenital, often running in families. *It may be produced* by anything which compresses the lungs, and at *the same time condenses* their substance, by the formation of tumours *within the chest, by* an enlarged heart, and by tight lacing. It has been supposed that emphysema and consumption never attack the same organ, that tubercular matter is never deposited in an emphysematous lung; but this doctrine having proved false in several instances, must be received with caution.

Treatment.—During the severe fits of difficulty of breathing so closely resembling asthma, we may relieve the patient by cupping him between his shoulders, and opium, combined with æther, will be of great use in cutting short the attack.

Take of Laudanum, 1 drachm.
Compound spirits of æther, 1½ drachm.
Compound tincture of lavender, 2 drachms.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken every two or three hours. Or tincture of lobelia may be given in the following form:—

Take of Tincture of lobelia, 1 drachm.
Ipecacuanha wine, 1½ drachm.
Camphor water, 6 ounces.

Mix, and give a sixth part every two hours.

The patient must be warmly clad, and the general health improved. Stramonium has been used with decided advantage in some cases, and may be smoked as recommended under the head of asthma. Patients of the better class should remove to a warmer and more equable climate, the breathing being much more difficult during the colder weather. Some medical men think this affection is due to impaired nutrition of the lungs and the system at large, and so recommend tonics and a nutritious and stimulating diet.

Take of Sulphate of iron, 16 grains.
Sulphate of quinine, 1 scruple.
Dilute sulphuric acid, 1½ drachm.
Compound tincture of lavender, 1 drachm.
Pure water, 8 ounces.

Mix, and let an eighth part be taken three times a day.

(20.) Foreign Bodies in the Air Passages.

Various are the bodies which may be put into the mouth, and accidentally find their way through the larynx into the windpipe, as fruit stones, morsels of food, false teeth, coins, buttons, &c. When any such body is thus introduced, it gives rise to paroxysms of cough and difficulty of breathing, and in some cases causes death, either by obstructing the respiratory process, or by setting up inflammation of the lungs. This state of things can hardly be mistaken for croup, for we have the history of the sudden onset of the disease in a person previously in good health, and frequently an adult, and expiration is usually more difficult than inspiration. In croup the patient is an infant, and often a male child of two or three years of age, and inspiration is more difficult than expiration, being of a characteristic crowing character.

Treatment.—If the offending substance be loose and round we must order the patient to bed, and he must take some form of narcotic medicine, so as to allay the spasm existing in the little muscles guarding the entrance to the larynx and windpipe; for in this is the main obstacle to the foreign body being removed by the violent coughing set up by its presence. Several cases are put on record in which foreign bodies were extricated from the windpipe by the patient placing his head downwards, and at the same time the spasmodic affection of the laryngeal muscles may be relieved by the previous inhalation of chloroform. Should these means prove unsuccessful, an artificial opening may be made by the surgeon into the windpipe; in fact, the operation of tracheotomy may be performed; and the inspired and expired air now passing through this newly-formed doorway, the muscular spasm relaxes, and the foreign body is removed by coughing.

DISEASES OF THE HEART.

(1.) Palpitation of the Heart.

This term is used to express that the action of the heart is increased in force or frequency. Sometimes its action is so powerful that the whole bed is moved by its beating, and it may be heard at some distance off.

Causes.—One of the most frequent causes of this affection is a disordered state of the stomach, as seen by the furred state of the tongue, and other well-marked symptoms of indigestion. Many articles of diet give rise to this disease, among which may be mentioned tea, if taken in excess. It may be due to nervousness, or irritability of the heart, and, in some few cases, to organic disease of this vital organ. Violent emotions of the mind frequently hurry and increase the force of the heart's beat.

Treatment.—If any portion of the heart's structure be diseased, it must receive appropriate treatment. If the valves be affected, as they too frequently are after attacks of rheumatic fever, the heart must be nourished and assisted in its action by the exhibition of steel and quinine.

Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 10 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

Anæmia and low states of the system may be relieved also by the *administration of iron* and other tonics.

Take of Ammonio-citrate of iron, 1 drachm.
Compound spirits of ammonia, 1½ drachm.
Salicine, 2 scruples.
Pure water, 8 ounces.

Mix, and take two tablespoonfuls three times a day.

Should the functions of the stomach be imperfectly performed, they must receive due attention and the treatment proper to the various forms of indigestion, as described under that disease. Tincture of digitalis has been much recommended as a sedative to the heart in various affections. The following is a convenient form of administering it:—

Take of Tincture of digitalis, 1½ drachm.
Bicarbonate of potash, 2 scruples.
Nitrate of potash, ½ drachm.
Pure water, 6 ounces.

Mix, and take a sixth part every four hours.

Plenty of fresh air should be allowed, and the patient should take gentle exercise during the day. His diet should be nourishing, but not stimulating. All kinds of mental emotion must be avoided, and perfect quietude maintained. This affection is frequently seen in nervous and hysterical patients, and those who suffer from hypochondriasis or lowness of spirits.

(2.) PERICARDITIS.

The serous membrane investing the cellular structure of the lungs, and lining the inner surface of the walls of the chest, is called in anatomical language the *pleura*, and that surrounding the muscular tissue of the heart the *pericardium*. When inflammation is set up in the former it is called, as we have previously seen, *pleuritis*, or pleurisy, and when situated in the latter it is termed *pericarditis*. This disease then consists essentially of inflammation of the several layers of the serous sac enclosing the heart and some portions of the great blood-vessels. It is most frequently seen in young and delicate persons suffering from rheumatic fever, and is characterised by the following symptoms: there is acute pain and a sense of oppression in the region of the heart, increased by pressure or deep inspiration; the heart's action becomes more frequent and irregular, and is of a tumbling character; the breathing is more or less affected, being quick and catching, and sometimes very difficult, so that the patient speaks with the greatest exertion and in broken sentences; the skin becomes hot and the tongue furred; in some cases the affection is attended with a peculiar delirium, in which the sufferer is obstinately taciturn and sullen; the face wears an anxious expression, and the invalid seems in a state of great anxiety and distress, and is unable to lie on his left side for fear of increasing the pain. This inflammatory affection of the heart sometimes precedes the inflammation of the joints, but usually comes on after the joint affection is well marked.

Causes.—As previously stated, this affection most frequently occurs as the result of acute rheumatism, and then too often leaves the heart of the delicate patient much damaged, the valves guarding its several orifices being more or less injured, or the investing membrane itself adherent to its walls, impeding it in its action, and giving rise either to hypertrophy or atrophy of its muscular substance, both of which conditions will be described as we proceed in the consideration of cardiac affections. It not unfrequently happens as a secondary affection in the course of chronic kidney disease, soon terminating the life of the reduced sufferer. In rare instances it may be traced to exposure to cold, and in some few cases to blows and mechanical injuries. During the several stages of many of the exanthemata, or contagious diseases, it is sometimes met with, especially in connection with scarlet fever and erysipelas. In the later stages of pulmonary consumption it may add its deadly effects to the mischief already existing in the organs of respiration. This disease proves dangerous to life in one of two ways—either by leading to chronic affections of this important organ, or by causing sudden death by copious and rapid effusion, and thus preventing the action of the heart.

Treatment.—This affection will be readily recognised in its earliest stage by the skilful physician; and, as it is a disease affecting an organ so necessary to the well-being of the human frame, and attended with well-marked physical signs, appreciated only by the stethoscope and an experienced and well-trained ear, his aid should be sought as early as possible. When the action of the heart begins to be excited, and the disease is just in its infancy, the pain may be much relieved and the inflammatory process cut short by the application of six leeches to the left side of the chest, over the situation of the heart; a linseed poultice must then be applied, and the leech bites allowed to bleed freely into it. Medical men of the present day never resort to bleeding in the treatment of this affection, although M. Bouillaud very strongly advocates such practice, and professes to *extinguish* the inflammation by its means. In former days mercury was always prescribed in this disease, and was thought to possess great power over it, but it is seldom or never used now, being quite unnecessary for the cure, and the patient, when salivated by its free administration, is always left in a very debilitated state. The skin and kidneys may be called into action by the exhibition of saline medicines, and opium may be given to relieve the pain, and keep the inflamed surfaces as much as possible at rest.

Take of Solution of acetate of ammonia, 3 drachms.
Sweet spirits of nitre, 2 drachms.
Compound tincture of lavender, 1 drachm.
Camphor water, 6 ounces.

Mix, and give a sixth part every four hours.

Or, Take of Nitrate of potash, ½ drachm.
Bicarbonate of potash, 1 drachm.
Tincture of henbane, 1 drachm.
Camphor water, 6 ounces.

Mix, and take a sixth part every three hours.

Take of Sulphate of quinine, 6 grains.
Powdered opium, 3 grains.
Confection of roses, sufficient to make up 6 pills.

And let one be taken three times a day.

The bowels must be regulated and kept gently open by calomel and colocynth, or any other mild aperient.

Take of Calomel, 24 grains.
Compound extract of colocynth, ½ drachm.

Mix thoroughly, divide into twelve pills, and give two occasionally at bedtime.

The diet should be liberal, consisting of milk, beef tea, mutton broth, and eggs, and, if necessary, brandy, wine, and other stimulants must be given to keep up the flagging action of the heart.

In the later stage of the disease, when a large quantity of fluid has been poured out, a blister applied over the affected side will materially assist and quicken the absorption of the serous effusion.

(3.) Valvular Disease of the Heart.

The valves of the heart may be affected in two different ways: they may be roughened and thickened, so as to prevent the free flow of blood over their surfaces, when the heart is said to be suffering from *obstructive* disease; or they may be rendered incapable of thoroughly and completely closing the orifices they are destined to guard, and the heart disease is then called *regurgitant*. As in other forms of heart affection, the exact condition of the injured valves may be easily deciphered by the alteration which has taken place in the sounds accompanying the beat of this organ as heard by the stethoscope, or by applying the ear to the surface of the chest. There are also other signs, such as the character of the pulse, its force, frequency, and fulness, which tell their own tale to the man of practice, but which cannot be appreciated by those not in the profession. The chief symptoms of valvular disease are these: the breathing becomes difficult, hurried, and catching, and in cases far advanced the patient has to labour for his breath, and is unable to assume the horizontal posture; the heart's action is irregular and intermittent, the head aches, the sufferer is troubled with giddiness and noises in the ears, the legs become swollen and infiltrated with fluid, and the lungs congested and inflamed; hæmorrhage takes place from various organs, as the nose and lungs, the liver becomes enlarged, and the face has a peculiar colour and expression—the cheeks are livid and purple, the lips congested, and the eyes glistening. As the valvular disease progresses the heart's action becomes more and more impeded, and from being overworked the organ itself increases in bulk and thickness, just as the muscles of the pugilist and labourer become enlarged by the constant action to which they are subjected; the heart is said to be *hypertrophied*, and its cavities growing larger as the walls increase in thickness, are said to be *dilated*.

Treatment.—The patient must be kept very quiet, and removed from all the bustle of every-day life; he should avoid all mental and emotional excitement; and, as the circulation of the blood is much retarded and its stream reduced by the altered condition of the valves, the walls of the heart must be nourished and its action assisted by a nutritious diet and the administration of tonics; a mixture containing steel combined with quinine will be found very useful; thus—

Take of Sulphate of quinine, 1 scruple.
Sulphate of iron, 16 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 8 ounces.

Mix, and let an eighth part be taken three times a day.

Should the action of the heart become much quickened and excited, relief may be afforded by the application of a few leeches, and small doses of tincture of digitalis have been much recommended to act as a sedative upon the irritated and excited organ.

Take of Tincture of digitalis, 20 minims.
Camphor water, 6 ounces.

Mix, and give a sixth part three times a day.

Sometimes great relief is obtained by applying a belladonna plaister over the region of the heart. When the patient becomes dropsical the remedies appropriate for this condition must be had recourse to, and all the secondary affections must be guarded against, and treated by the usual methods.

(4.) HYPERTROPHY OF THE HEART.

By the term *hypertrophy* is meant an increased growth of a natural tissue, with an increase of power, but no alteration of form. The minute fibrils of which the muscular tissue of the heart is made up are much increased in number, and some observers maintain that the nerves undergo a process of enlargement. With this increase in size and thickening of the walls the several cavities may be either increased in area or retain their original dimensions; the former condition more frequently obtains, the heart being hypertrophied, and its cavities dilated. This increased growth of the substance of the heart is essentially due to the more forcible action of this organ, its arduous duties being increased by some obstacle to the onward current of the blood, and as this obstacle increases in strength, so must the heart be rendered more powerful, in order to keep the circulation in a healthy state. Thus hypertrophy is in many instances a state of things conducive to health, and such is the case when it occurs in the heart; *for if this organ be not* increased in power in proportion as the hindrance to the flow of blood grows stronger, the nutrition of the body must soon be interfered with, serous fluid accumulates in the limbs and cavities, other secondary affections soon set in, and death rapidly follows.

Hypertrophy of the heart is attended by the following symptoms: the impulse of the organ against the walls of the chest is much increased, its beating becomes much more powerful, and consists of a steady, heaving swell; the first sound is somewhat muffled, and the pulse beats very forcibly; the sufferer is liable to venous congestion, and losses of blood from various parts and organs of the body, the face is flushed, there is headache, the patient complains of giddiness and difficulty of breathing. In some cases the heart may be seen to beat and to raise the bedclothes, or shake the whole bed on which the patient is lying.

Causes.—Anything which increases the force and frequency of the heart's beat may act as an exciting cause of this affection. Some physicians maintain that it may be brought on by too active and violent exercise of the body, such as running, rowing, and other amusements consisting of a prolonged state of exertion, and necessarily hurrying the heart in its important duties. Hypertrophy of the heart is frequently met with in old persons, from the current of the blood being retarded by the stiff and rigid condition of their blood vessels. When the blood contains some foreign matter it is circulated with much difficulty through the smaller capillaries, so that the heart's action has to be proportionately increased. We often find this condition of heart in persons who have suffered for some length of time from chronic renal or pulmonary disease. When the kidney performs its work inefficiently urea and other excreta are retained in the blood, and form great obstacles to the free passage of the tainted fluid through the smallest divisions of the arterial tree; and so also carbonic acid gas, which is often retained in the blood of persons suffering from long-standing lung disease. It has been previously stated that this condition may be, and often is, caused by pre-existing valvular disease of the heart, and adhesion of its investing membrane. In rare cases the hypertrophy is due to causes external to the heart itself, such as curvature of the spine and other morbid conditions displacing the organ and hindering its free play.

Treatment.—Since this anatomical condition is in most instances an effort on the part of nature to keep the body in health, we must not endeavour to cure it, but must relieve all urgent symptoms as they arise. Should the heart's action become inordinate, it must be reduced by the application of a few leeches to the left side of the chest, and by arousing the kidneys by a saline mixture containing small doses of tincture of digitalis, which is said to act as a direct sedative upon the affected organ.

Take of Nitrate of potash, ½ drachm.
Bicarbonate of potash, 1 drachm.
Tincture of digitalis, 18 drops.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken every six hours.

A belladonna plaister may be applied over the cardiac region, and will often exert a very soothing effect, and render the now violent action of the heart rapidly tranquil. Should the breathing become very difficult, anti-spasmodics and stimulants must be given.

Take of Compound spirits of æther, 2 drachms.
Compound spirits of ammonia, 1½ drachm.
Compound tincture of lavender, 1 drachm.
Camphor water, 6 ounces.

Mix, and give a sixth part every four hours.

If there be much debility present, great benefit will be derived from the free administration of steel, which may be advantageously combined with sulphate of quinine; thus—

Take of Sulphate of iron, 16 grains.
Sulphate of quinine, 1 scruple.
Dilute sulphuric acid, 1 drachm.
Pure water, 8 ounces.

Mix, and let an eighth part be taken three times a day.

Or, the ammonio-citrate of iron may be given combined with salicine; thus—

Take of Ammonio-citrate of iron, 1 drachm.
Salicine, ½ drachm.
Compound spirits of ammonia, 1½ drachm.
Pure water, 8 ounces.

Mix, and take two tablespoonfuls three times during the day.

The bowels must be regulated by the occasional use of mild purgatives at bedtime; the patient's mind must be kept at rest, he should be removed from all excitement, and carefully shielded from all circumstances tending to produce any emotional feeling.

(5.) Fatty Degeneration of the Heart.

There are two distinct forms of this disease: in the one the accumulated fat is deposited upon its outside; and in the other it is mixed with the ultimate particles of which the muscular fibres are composed. It is very difficult of diagnosis during life, the heart's action becomes very feeble and irregular, the patient bears a pale, sallow, anæmic look, exhibits a tendency to obesity in other parts of the body, and is very much enfeebled and debilitated, and capable of no exertion. It may occur at any period and in any station of life; but is usually met with in persons well advanced in years. The pulse is slow and feeble, sometimes irregular; but occasionally maintains its rhythmical beat.

Causes.—This morbid condition of the heart is often only a part of an abnormal action affecting the whole system, being associated with *the accumulation of fat in* other parts of the body. Indolent habits and free living are strong exciting causes; and free indulgence in alcoholic liquors leaves strong marks of this morbid condition of the heart. The hearts of habitual drunkards during their attacks of delirium tremens are often temporarily fatty, and thus some cases of sudden death have happened, from rupture of its walls during the course of this disease from inexperienced nurses and attendants struggling with the delirious and excited patient. Impaired nutrition of the body is attended with the deposition of fat in the various organs. Thus, the liver contains large quantities of fat in patients suffering from consumption, and other chronic weakening diseases.

Effects.—The effects of this degeneration of the heart are very varied in their nature: the walls may be ruptured by violent exertion on the part of the patient; or sudden death may be caused by paralysis, or spasm, affecting the diseased organ. Angina pectoris, or breast pang, is a frequent result, and sometimes proves fatal, as in the case of the late Dr. Arnold. At other times apoplectic symptoms trouble the patient, and tend to shorten his existence. People who are affected with fatty hearts cannot undergo with safety any surgical operation, the administration of chloroform even being attended with much danger; and some few suffering from this condition of heart, who have met with trifling accidents, have sunk under their effects. Thus Sir Cresswell Cresswell died from a broken kneepan, having previously suffered from a fatty state of the heart.

Treatment.—The general nutrition of the body must be improved, and the power of the heart strengthened by tonics.

Take of Sulphate of quinine, 10 grains.
Sulphate of iron, 12 grains.
Dilute sulphuric acid, ½ drachm.
Pure water, 6 ounces.

Mix, and take a sixth part three times a day.

Lean meat may be allowed; stimulants should not be withdrawn too suddenly, but must be given in very small quantities. General dropsy supervening must be treated by the appropriate remedies; difficulty of breathing and spasm may be relieved by the application of a few leeches to the cardiac region. The free use of brandy and water and the following anti-spasmodic and stimulating draught:—

Take of Compound spirits of æther, ½ drachm.
Compound spirits of ammonia, 20 drops.
Compound tincture of lavender, 15 drops.
Pure water, 1½ ounce.

Mix, and make a draught, and repeat the dose as required.

(6.) Angina Pectoris, or Breast Pang.

This is a paroxysmal affection frequently occurring while the patient is walking, or otherwise exerting himself, especially after taking food. It consists of a feeling of immediate dissolution, with faintness and a severe constrictive pain within the chest towards the left side, extending backwards to the spine, upwards to the left shoulder, and down the arm of the same side, often terminating abruptly towards its middle, but sometimes extending as far as the elbow-joint. There is no shortness of breath, and the lungs are in no way affected. It usually comes on while the patient is walking, especially if he be going up hill or against wind, and in its earliest attacks ceases upon his standing still. When the disease has made further progress it is not thus easily relieved, but often vexes the practitioner, and foils all his well-aimed modes of treatment, coming on in more severe paroxysms with much shorter intervals. Each seizure commonly lasts for a few minutes only; but may be prolonged to half an hour, or even longer. It is a very fatal disease, and occurs most frequently to persons in the middle period of life, and more often to men than women. Some connection seems to exist between it and gout, and these two diseases have been known to alternate.

Causes.—It may be brought on by anything which disturbs the action of the heart, such as a hearty meal, bodily exertion, or mental excitement. Some have supposed that it is of a nervous character, being allied to neuralgia; but this seems to be inconsistent with the too frequent sudden death of the sufferer. Others have thought it due to spasm; but were such the case, anti-spasmodic medicines would have more power over it. Angina is frequently due to over distension of the cavities of the heart, the walls being pale, thin, and flabby; and this state of things may be materially relieved by the local abstraction of blood, or by small bleedings from the arm. It frequently attacks hearts which have already undergone fatty degeneration, and in which the nutrient arteries have become ossified or otherwise diseased.

Treatment.—The action of the heart must be kept as quiet as possible; the patient should not be allowed to take any active or violent exercise, and must be screened from all mental emotion; the digestive organs must be regulated and kept in a healthy state, and too hearty meals must be avoided. When the affection is due to over-distension, bleeding, as previously stated, gives great relief; but this is very seldom required, more benefit being derived from stimulant and anti-spasmodic medicines. A belladonna plaster may be applied over the heart, and the following mixture prescribed:—

Take of Compound spirits of æther, 1½ drachm.
Compound spirits of ammonia, ½ drachm.
Compound tincture of lavender, 1 drachm.
Distilled water, 3 ounces.

Mix, and give a third part every hour till the paroxysm is relieved.

The attack may sometimes be cut short and the acute pain lessened by the inhalation of chloroform, or the administration of opium, thus:—

Take of Laudanum, 20 drops.
Pure water, 1 ounce.

Mix, and make a draught to be taken immediately; or a draught containing 15 minims of Battley's solution of opium, and an ounce and a half of lukewarm water may be given instead of the laudanum draught, some physicians thinking that Battley's solution is more useful than the ordinary tincture.

Brandy and wine should be allowed during the paroxysm, and the return of the disease must be guarded against by improving the general health, and by the avoidance of all mental and emotional excitement. During the intervals of the fits, metallic tonics, as bismuth, iron, and sulphate of zinc, must be tried.

Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 10 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and give a sixth part every six hours.

Sulphate of zinc may be given in the following pills:—

Take of Sulphate of zinc, 12 grains.
Confection of roses, sufficient to make 12 pills,

one of which should be given three times a day.

A blister or issue may be applied to the chest or between the shoulders; and some practitioners recommend counter-irritation as produced by the following ointment:—

Take of Tartar emetic, ½ drachm.
Hog's lard, ½ ounce.

Mix, and make an ointment to be rubbed in over the affected organ once or twice during the day.

Nitrate of silver and arsenic have been proposed as remedies for this disease, but have found very little favour with the large bulk of practitioners. Prussic acid has been found useful in some cases, and may be thus given:—

Take of Hydrocyanic acid (Pharmacopœia), 12 drops.
Compound spirits of ammonia, 2 drachms.
Pure water, 6 ounces,

Mix, and let a sixth part be taken every three or four hours.

(7.) RUPTURE OF THE HEART.

To "die of a broken heart" is often spoken of in every-day life as if it were a very common cause of death; but, in truth, it very rarely happens, although several well-authenticated instances have been placed on record: thus George II. died of a ruptured heart. It may be the result of previous disease, or of mechanical injury. Ulceration of the lining membrane may lead to it; but the morbid condition with which it is most intimately connected is fatty degeneration, the walls of the heart being rendered pale, soft, mottled, and friable. It occurs more frequently in males than females, and in those who are well advanced in years. Death is generally immediate; but life may be somewhat prolonged by the wound being plugged with clotted blood. Nothing can be done in the way of treatment.

(8.) Blue Disease, or Morbus Cœruleus.

Blue disease derives its name from the peculiar discolouration of the skin with which it is attended; it arises from the circulation of a mixture of venous and arterial blood from an arrested development of the heart. After the infant is born, and separated from its mother, to carry on an independent existence, the opening between the two sides of the heart, which was previously free, becomes permanently closed. In some few instances this process is imperfectly carried out, and the venous blood of the right side of the heart becomes mixed with the arterial on the left side, so that instead of the nutritious, crimson, arterial blood circulating through the system, we have a mixture of it—and blood containing a larger amount of carbonic acid gas, and less than the ordinary amount of oxygen—thus giving rise to the peculiar discoloration of the skin and the disease at present under consideration. The little patient seldom lives any length of time, often dying at or soon after the birth; the skin of the body is cold, there is palpitation, the breathing becomes difficult, and dropsical fluid accumulates in various parts of the body.

Treatment.—Little or nothing can be done with the view of relieving this morbid condition; but the more urgent symptoms must be treated as they arise, and the little patient's temperature kept up by warm clothing. Some medical men have recommended chlorate of potash in this disease, so as to oxygenate the circulating blood; but this drug has not proved itself of any service in actual practice.

(9.) Aneurism of the Heart.

When the walls of the heart become thin, there may be formed one or more pouches connected with its cavities, constituting tumours of a rounded character on its surface, and containing laminated coagula. The symptoms are very obscure, this morbid condition being revealed only after death, which takes place by rupture of the aneurismal pouches, and the consequent escape of the contained blood.

DISEASES OF THE ŒSOPHAGUS, OR GULLET.

(1.) Spasmodic Stricture of the Gullet.

Spasm of the œsophagus is marked by the following symptoms: *difficulty of swallowing,* a peculiar pain in the throat, and a sense of choking. Like all other forms of spasm, its onset and general behaviour is very capricious. A person, whilst quietly enjoying his meal, is suddenly seized with all the above symptoms, and for a variable length of time is unable to swallow any more food; but the power of deglutition is again suddenly recovered. This affection may be diagnosed from organic disease by the fact that a bougie can be passed down the throat without meeting with any hinderance, and by the above detailed peculiarities.

Treatment.—Spasmodic stricture of the gullet always depends upon a nervous and hysterical state of the system, and may be relieved by the free use of tonics and anti-spasmodics.

Take of Compound tincture of valerian, 1½ drachm.
Camphor water, 6 ounces.

Mix, and take a sixth part three times a day; or the following pills may be given:—

Take of Compound assafœtida pill, 1 drachm.

Divide into twelve pills, and give one three times a day.

The patient should be allowed plenty of exercise and fresh air, the cold shower bath will be found useful, a nutritious diet will be required, and in some cases the occasional use of the bougie may be found advantageous. If the patient be much debilitated, steel given with aloes will be of much service.

Take of Sulphate of iron, 16 grains.
Sulphate of quinine, 12 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, ½ pint.

Mix, and take two tablespoonfuls every six hours.

And, Take of Socotrine aloes (powdered), 24 grains.
Powdered myrrh, 12 grains.
Confection of roses, sufficient to make 12 pills,

two of which must be taken at bed-time occasionally.

(2.) PALSY OF THE ŒSOPHAGUS.

In this affection the patient is unable to swallow; but there is no pain or any of the symptoms of spasm, and a bougie may be freely passed down the throat, meeting with no obstruction. It depends upon some disease existing in the brain or spinal cord. As deglutition is absolutely impossible, and the sufferer is starving, food must be given by the bowels: nutrient enemata, consisting of milk and beef-tea, must be thrown up, and not more than 4 or 5 ounces at one time, and if they be not retained, a few drops of laudanum may be added to each injection. Nothing can be done to remedy the diseased condition of *the nervous* centres.

(3.) PERMANENT STRICTURE OF THE ŒSOPHAGUS.

By this term is meant a permanent narrowing and contraction of the gullet, caused by the thickening of its mucous lining, which projects into its cavity as a hard ring; it is most frequently met with in females. This affection is characterised by these symptoms; there is permanent difficulty of swallowing, never better at one time than another, but gradually becoming worse, so that soon this act amounts almost to an impossibility; sometimes it is aggravated by fits of spasm; a bougie, when passed down the throat, meets with a steady, firm, and resisting obstruction.

Causes.—The most frequent cause of stricture of the gullet is mechanical injury to its mucous membrane; thus it often depends upon inflammation set up by the patient's swallowing boiling water, strong acids, or alkalies, and in rare instances has been traced to repeated attacks of quinsy.

After this state has existed for some time, the gullet becomes ulcerated on either side of the contracted part, and the patient is annoyed with constant vomiting of purulent and fetid matter.

Treatment.—The treatment of this disease is very unsatisfactory, for it generally runs on, though slowly, to a fatal termination, the patient, being unable to swallow any nutriment, becomes more and more emaciated; and, at last, dies of sheer starvation. The fits of spasm may be relieved by the application of a few leeches, and the pain alleviated by the use of sedatives, thus:—

Take of Tincture of henbane, 1½ drachm.
Compound spirits of æther, 2 drachms.
Camphor water, 6 ounces.

Mix, and take a sixth part every four hours.

Some think that a seton inserted between the spade bones have relieved the sufferings of the wasted patient, but the irritation from the remedy itself is very great, and sometimes adds to that already existing. The stricture must, if possible, be kept dilated by the occasional passage of the bougie, or a piece of sponge moistened with a solution of nitrate of silver, attached to the end of a stem of whalebone.

(4.) CANCER OF THE ŒSOPHAGUS.

This disease is attended with symptoms similar to those of permanent stricture of this tube; there is pain in the throat and between the shoulders, and permanent difficulty of swallowing, which gradually increases, this act becoming at length impossible. It is difficult to distinguish this morbid condition from one or two other diseases of this organ, but the treatment differs very little from that of permanent stricture; it is of no use in the later stages of the disease to try to force the bougie past the obstacle, as it now depends upon a mass of hard cancer blocking up the canal, and such a proceeding will only add to the patient's discomfort and misery. Pain may be relieved by the use of laudanum, or henbane, which may be thus given, in the form of a draught, at bedtime:—

Take of Tincture of henbane, 30 drops.
Pure water, 1 ounce.

While the patient is yet able to swallow, the diet must consist of beef tea, and mutton broth, plenty of eggs and milk being allowed at the same time; ice may be sucked to relieve sickness; and wine and all kinds of delicacies should be freely given. When the disease is further advanced, and the patient is unable to swallow, food must be given by the bowel, as recommended under the head of Permanent Stricture. Sometimes the pain may be relieved by the application of a belladonna plaster between the shoulders.

(5.) Foreign Bodies.

Foreign bodies lodged in the back part of the throat give rise to difficulty of breathing, suffocative cough, and a sense of choking; this condition may prove fatal in two ways, either suddenly by refusing admission of air to the lungs, or by producing ulceration by the long continued contact of the foreign body, accompanied by profuse expectoration of purulent matter, difficulty of breathing, hectic fever, and night sweats.

Treatment.—The patient must be placed in a chair, and having thrown his head back, must be made to open his mouth widely, one or two fingers of the right hand should then be thrust as far down the throat as possible, and passed round, with a view of feeling, and getting hold of the offending substance; thus fins and fishbones often become entangled under the finger nail, and, if not, after we have found out the situation of the foreign body, we must endeavour to pull it up by means of a pair of long, curved forceps. If the body be small and sharp, as a fishbone, and has passed down the gullet beyond the reach of the finger, it may be pushed downwards by swallowing a crust of bread, or, if large, rounded, and soft, it may be thrust down by the *probang*, which consists of a piece of bone or sponge attached to a whalebone stem, and having the necessary curve to correspond with the direction of the gullet; but if the swallowed body be angular and sharp, it must, if possible, be brought up, and the aid of the surgeon should be sought, who will have recourse to long forceps, or a piece of whalebone furnished with a flat, blunt hook, and other convenient instruments with which he is familiar. Sometimes, smooth bodies, having a rounded form, may be dislodged from the gullet by the exhibition of a brisk emetic; pieces of food may be got rid of in this simple way. As a last resource, when the *body remains fast,* and cannot be moved upwards or downwards, and *the patient's* life is in danger, an operation, called by surgeons *œsophagotomy*, has been performed, but with unsatisfactory results; it consists, essentially, of cutting an opening into the gullet, introducing a pair of slender forceps, and extracting the foreign body through this artificial aperture.

DISEASES OF THE ABDOMEN.

(1.) Peritonitis.

This is a term used by medical men to signify inflammation of the serous membrane, investing the bowels and abdominal viscera; it may be met with either in the acute or chronic form.

(*a*) *Acute peritonitis* is characterised by pain at first circumscribed, but afterwards extending over the whole abdomen; it is increased by pressure, and soon becomes so severe that the weight of the bedclothes can hardly be borne; there are severe febrile symptoms, well marked rigors, a hot and dry skin, and a furred tongue; the patient lies on his back with his knees drawn up, and the respiration is completely carried on by the walls of the chest, the abdominal muscles not being put into action for fear of increasing the pain; the abdomen becomes tense, hot, and tympanitic, nausea and vomiting are troublesome, and the bowels constipated; the pulse is rapid and weak, and the countenance much pinched, and expressive of intense anxiety. As the disease runs on towards a fatal termination, the pulse becomes quicker and less powerful, the face becomes pale and more ghastly, sordes collect on the teeth, and the weakness gradually increasing, the patient dies without a struggle, his intellect remaining clear to the last.

Causes.—Inflammation of the peritoneum may be caused by exposure to cold and wet, by perforation of the stomach or intestines, and the escape of their contents, or by the bursting of hepatic and other abscesses into its cavity. It is sometimes met with in erysipelas, and other forms of blood poisoning. There is one form of this malady which must not be passed by unnoticed, attacking women on the third or fourth day after delivery, and spreading by contagion; the subtle poison may be carried by the hand of the accoucheur from cases of erysipelas, sloughing sores, typhus fever, and post-mortem examinations.

Treatment.—In former days, this acute affection was always treated by copious bleeding, and the free administration of mercury, but these remedies are but seldom used by medical men of the present day. During the earliest stage of the affection, six or ten leeches should be applied to the abdomen, and on their coming off a large warm linseed poultice covered over, and the leech-bites allowed to bleed freely into it; opium must be given internally to ease the pain and rest the inflamed surfaces.

Take of Powdered opium, 5 grains.
Sulphate of quinine, 6 grains.
Confection of roses, sufficient to make 6 pills,

one of which must be taken every three or four hours.

In all cases, purgatives must be avoided, for they tend to increase the inflammation by exciting the muscular contraction of the intestines; if the bowels be much confined, and the belly distended, a turpentine injection should be given, thus:—

Take of Turpentine, ½ ounce.
Mucilage of acacia, 2 ounces.

Shake them together well, and add 6 ounces more mucilage, and throw the mixture up the bowels by means of an ordinary enema apparatus.

The diet must be nutritious, but not stimulating; should the patient be much reduced, wine and strong beef tea will be of service, and in all cases absolute rest and quietude are very essential.

(β) *Chronic peritonitis* sometimes follows an acute attack, but more frequently is an independent affection. The symptoms of this form are more obscure than those of acute peritonitis, coming on more gradually and insidiously; there is pain in the stomach, with some fulness and distension, the pain is increased by pressure and all kinds of movements on the part of the patient, the functions of the alimentary canal become disturbed, the sufferer is troubled with sickness and nausea, the bowels are constipated, and there is loss of appetite.

This affection generally occurs to persons of the strumous diathesis, and in many instances the inflammatory action is set up by the presence of myriads of little scrofulous tubercles which have been deposited from the blood into the affected membrane.

Treatment.—A few leeches may be applied to the abdomen, and followed by soft and warm linseed poultices, opium may be given internally, and when the disease has assumed a still more chronic form, blisters applied to the surface of the abdomen will be of great service, and the compound iodine ointment may be rubbed in with advantage. Cod-liver oil may be given to nourish the strength of the patient, and improve his general health.

(2.) Dropsy of the Body, or Ascites.

In a few rare cases, serous fluid accumulates within the body as the result of acute and chronic inflammation of the peritoneum, or serous membrane in which the bowels are packed; but the greater number of cases are of a passive nature, arising from obstruction to the flow of blood towards the cavities of the heart. General dropsy may be due to disease situated in the kidneys or heart, and is then called *renal or cardiac dropsy*, but in the morbid condition at present under consideration the accumulation of fluid is not general, the arms are not infiltrated with serum, nor are the legs, except as a secondary effect of the pressure of the fluid already accumulated within the abdominal cavity. When the body is full of fluid, the breathing becomes short, quick, and difficult, and the patient has a peculiar upright gait. The most frequent cause of ascites is disease in the liver, obstructing the free flow of blood through the large veins situated in its substance, and the morbid condition of the liver most commonly giving rise to it, is a disease called the "hobnail liver," and by physicians *cirrhosis*, from the hard, dense, and contracted state of this organ, and it being raised into nodules on its surface resembling the rough character of hobnails. Any kind of pressure on the abdominal veins will give rise to dropsy of the body; thus it may be due to the presence of cancer, and scrofulous disease of the liver, or to abdominal tumours and enlarged mesenteric glands; in some cases it has been traced to an enlarged state of the spleen. By far the most frequent cause is the cirrhosed or hobnail liver, and this state of the hepatic organ is usually due to intemperance and the abuse of alcoholic liquors. This part of the subject will be again referred to when we come to consider the diseases affecting the liver.

Treatment.—Our great aim in treating this disease must be to disperse the fluid. The skin may be called into action by the following medicine:—

Take of Solution of acetate of ammonia, 2 drachms.
Sweet spirits of nitre, 1½ drachm.
Compound tincture of lavender, 1 drachm.
Camphor water, 6 ounces.

Mix, and give a sixth part every three or four hours.

The bowels must be acted on by brisk purgatives.

Take of Acid tartrate of potash, ½ ounce to 1 ounce.
Resin of scammony, 20 grains.

Mix thoroughly, divide into four powders, and let one be taken every morning.

In Germany, the muriate of ammonia and extract of dandelion have been used with success in some few cases.

Take of Muriate of ammonia, 1 drachm.
Extract of dandelion, 2 drachms.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken every six hours.

Some medical men recommend iodide of potassium and mercury in this form of dropsy; but the patient is very frequently too much reduced by the disease itself to be subjected to such lowering methods of cure. When there is great debility, steel may be given with salicine.

Take of Ammonio-citrate of iron, 1 drachm.
Salicine, 2 scruples.
Compound spirits of ammonia, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times during the day.

The diet must be liberal, consisting of meat and all kinds of delicacies. Wine may be allowed, and, in many cases, gin in small quantities benefits the sufferer, keeping up his system, and acting at the same time as a diuretic. After these remedies have received a fair trial, and found to fail, if the breathing be getting much embarrassed, and the heart's action interfered with, the patient will require to be tapped, and the surgeon's aid should be sought to let out the accumulated fluid. This operation must be resorted to only after all the other methods have failed, for the fluid will gradually accumulate again, and require another operation in a short time, because the morbid condition of the liver giving rise to the liquid effusion is beyond all cure. The author has just had under his care a man suffering from this disease, who was treated by the above remedies: his skin, bowels, and kidneys were acted on, and he was finally tapped. The fluid again rapidly accumulated, and the patient died soon after the performance of the operation, the hepatic disease having so far advanced as to be incompatible with life.

DISEASES OF THE STOMACH AND INTESTINES.

(1.) Inflammation of the Stomach, or Gastritis.

Inflammation of the stomach occurs in two forms: one the acute, and the other the chronic.

(*a*) Acute inflammation of this organ arising spontaneously is a very rare disease, but is frequently met with as the result of mechanical injury, especially in cases of poisoning by vegetable and mineral acids and other irritant and corrosive drugs. The symptoms denoting that this action is going on in the stomach are the following:—Burning pain, increased by swallowing, and constant sickness. The patient is troubled with hiccup, and there is tenderness and distension of the whole abdomen. The mind becomes oppressed, the spirits cast down, and the pulse small and thready. These symptoms are soon followed by those of collapse; the patient becomes faint, the surface of his body cold, and his skin pale and bathed in cold perspiration, and the weakness is extreme. Thirst is urgent, and the bowels much confined. The pain accompanying this affection is augmented by swallowing, by pressure upon the stomach, and all kinds of movement and exertion on the part of the patient. As the diaphragm or midriff descends during inspiration it presses upon the tender organ, so that the breathing is short and constrained, and the abdominal muscles are brought more freely into play in the general process of respiration. When the inflammation is due to corrosive poisoning, the bowels, instead of being confined, may be affected with dysenteric diarrhœa, blood and mucus being freely passed with their excreta. When this disease proves fatal, it does so in the course of a few days, and fainting commonly precedes death.

Causes.—As previously stated, idiopathic inflammation of the stomach in an acute form is very rare. It is generally due to poisoning by drugs of an irritant and corrosive nature and action: Thus, arsenic and corrosive sublimate will light up acute inflammation in the mucous membrane of this organ, not only when taken in poisonous doses internally, but even when rubbed into the surface of the skin, or inserted into a wound. It is sometimes due to drinking cold and acid drinks, such as cold water or stale beer, while the skin is actively perspiring; and at others it may be traced to too hearty a meal.

Treatment.—The patient should take little or no food by the mouth; but nutrient enemata, consisting of milk, beef tea, and broth must be thrown up the bowels by means of an ordinary clyster syringe. Opium may be given internally, and the vomiting relieved by sucking ice. The local abstraction of blood by means of a few leeches, and the subsequent application of a large linseed poultice, will often give great relief to the pain; but bleeding from the arm is unnecessary. When any of the more active poisons have been swallowed, emetics will be necessary if vomiting be not already induced by the contact of the poisonous matter with the mucous lining of the stomach; but the stomach-pump should not be used. When the inflammation has reached its height, and the more active symptoms have passed away, great care must be taken not to overwork the irritated organ; the diet must consist solely of farinaceous food and milk, and should be taken in very small quantities at one time. The main remedies, then, for this affection are, perfect rest in bed, the local application of leeches and linseed poultices, ice to relieve vomiting, the administration of food by the bowels, and opium by the stomach.

Take of Powdered opium, 8 grains.
Confection of roses, sufficient to make 12 pills,

one of which should be taken every four hours.

(β) Chronic inflammation of the stomach is a very common disease, and requires careful study, as it gives rise to all the symptoms of indigestion. It is characterised by pain in the region of the stomach, flatulence, sour eructations; a sense of weight, heaviness, and oppression after meals; nausea and vomiting. The patient is troubled with water-brash or pyrosis, a copious fluid resembling the white of an egg being thrown up from the stomach. The pulse is quick and full, the tongue red, glazed, and rough; and there is much prostration of strength and depression of spirits.

Causes.—This form of the disease may be the sequel of an acute attack, or may be caused by anything which tends to disarrange the digestive organs. Thus it may be the result of excess in eating and drinking, or, on the other hand, may be due to long-continued abstinence. Arsenic and corrosive sublimate are sometimes its exciting causes; and it is very liable to attack persons of a full habit, and the gouty diathesis. In some cases it is the result of some obstacle to the free passage of the food from the stomach into the bowels, such as cancer of the smaller end of the stomach.

Treatment.—More good is to be derived from the dietetic than the medicinal plan of treatment. Strict attention must be paid to the diet of the patient; and in many cases if this be lowered the disease will soon remit. Persons suffering from this affection may be allowed all kinds of farinaceous food, such as arrowroot, gruel, tapioca, rice, sago, milk, jellies, and beef tea. Should the pain be very severe a few leeches may be applied over the affected part, or counter irritation may be set up by a blister, or tartar emetic ointment, made by rubbing down one drachm of this salt in an ounce of pure hog's lard. The bowels must be kept freely open by purgative clysters or castor oil, and the digestive organs brought into as healthy a state as possible. Bismuth exerts sometimes a soothing effect upon the stomach, and may be given in the form of the white bismuth of the British Pharmacopœia, thus:—

Take of White bismuth, 2 scruples.
Mucilage of acacia, 6 ounces.

Mix, and take a sixth part three or four times a day.

(2.) Ulcer of the Stomach.

One of the results of chronic inflammatory action going on for any length of time in the stomach is the production of ulcers in the mucous membrane. They vary in size from a split pea to that of a shilling. There is usually but one. Its edges may be perfectly smooth and sharp, and not surrounded by any inflammatory blush, giving to the eye the appearance of a piece of the stomach having been removed by an ordinary punch; or they may be hard, rounded, and elevated. Ulcers of the stomach may penetrate so deeply as to perforate the organ and allow its contents to escape, giving rise to fatal inflammation of the body; or during their active progress they may lay open some large vessel and cause fatal hæmorrhage. But when neither of these untoward complications presents itself, they may undoubtedly heal; as most pathologists have met with, in the post-mortem room, many stomachs the mucous membranes of which were marked by the cicatrices of old ulcers. This affection is much more common in females than in men, and perforation of the stomach is most frequent in girls about the age of fifteen, being of rare occurrence after the thirtieth year. These ulcers are difficult of cure in consequence of the frequent stretchings and contractions to which this organ is subjected, and of the presence of the irritating gastric juice, and the constant contact of various articles of food. The symptoms denoting that ulceration is going on in the stomach are much like those of chronic inflammation: pain and uneasiness at the pit of the stomach, increased by pressure and all kinds of movement and exertion, and by the ingestion of food; the patient is troubled with flatulence and sour eructations. The pain pierces through to the back, and is accompanied by nausea and vomiting, and occasionally by hæmorrhage. The nights are passed without sleep, and there is great languor and debility. The patient grows pale and thin, loses his appetite, and is at last afraid to take any food for fear of increasing the pain.

Treatment.—Our great aim must be to heal the open sore, and to nourish and support the reduced system. The pain may be relieved by hot fomentations, turpentine stupes, and mustard poultices; vomiting and hæmorrhage may be relieved by ice, and opium may be given with advantage. Bismuth often gives great relief, acting as a direct sedative upon the inflamed and irritable organ; it may be given mixed with compound kino powder; thus:—

Take of White bismuth, 1 drachm.
Compound kino powder, ½ drachm.
Mucilage of acacia, 8 ounces.

Mix, and let an eighth part be taken three times a day.

When there is much sickness present, the following medicine given in an effervescing form will give relief.

Take of Carbonate of soda, 2 drachms.
Hydrocyanic acid (pharmacopœia), 10 drops.
Compound spirits of ammonia, 1½ drachm.
Pure water, 6 ounces.

And, Take of Tartaric acid, 1½ drachm.

Divide into six powders, dissolve one in a tablespoonful of cold water, and add it to a sixth part of the mixture, and let a dose thus prepared be taken every three hours while effervescing.

Tonics consisting of steel and bark should be given when the stomach is quiet.

Take of Ammonio-citrate of iron, 1 drachm.
Compound spirits of ammonia, 1 drachm.
Infusion of quassia, 6 ounces.

Mix, and let a sixth part be taken three times a day.

But the main plan we must rely upon in the cure of this and all other affections of this organ is the careful regulation of the diet. No solid food should be allowed, but beef tea, milk, eggs, and farinaceous substances, as sago, rice, arrowroot, oatmeal, gruel, and tapioca. When the stomach rejects everything, nutrient food and medicine must be given as injections by the bowels. As the patient improves a light pudding may be allowed, and a piece of fish or chicken, and thus gradually the diet of ordinary every-day life may be returned to, the patient carefully feeling his way, and studiously avoiding setting up any irritation in the tender organ. During the whole course of this disease stimulants must be forbidden, as tending only to excite the circulation of the blood and to act as local irritants; but should they be at any time necessary, they may be given as enemata. Too much food should not be taken at one time, as the stomach in no case must be distended.

(3.) Hæmorrhage from the Stomach, or Hæmatemesis.

Hæmorrhage from the stomach takes place, as in other cases of bleeding from mucous membranes, from a number of small capillaries, except in rare instances in which a large artery is opened by the process of ulceration.

Causes.—Blood may be poured out from the vessels of the stomach and vomited by the mouth under several different morbid conditions. In very rare instances it is idiopathic, that is, independent of any particular cause or any obvious change in texture. Sometimes it occurs vicariously of menstruation, blood being poured out at each catamenial period from the vessels of the stomach instead of those of the womb. This kind of vicarious menstruation is not generally dangerous to life, but when it becomes profuse means should be taken to check its progress. Gastric hæmorrhage may be the result of mechanical injury, or disease situated in some part of the organ; thus it is frequently due to malignant disease—to some cancerous growth in its walls, which, being in the stage of softening and of a very vascular character, pours out blood into its cavity, and this acting as a foreign body excites vomiting, and is thrown up through the mouth; we have seen also that it is not unfrequently due to ulcer of the stomach. Blood is often thrown out from this organ from the corrosive action of some irritant poison; in such cases the hæmorrhage is preceded by active congestion, and is arterial; again, we may have hæmatemesis due to obstructive disease of the heart, and associated with a contracted state of the liver and an enlarged condition of the spleen—the hæmorrhage is then of a passive character, and consists of venous blood. During the later periods of pregnancy, when the womb and its contents, having reached a large size, exert strong pressure upon the veins, materially impeding the circulation going on within them, we get as one of the results blood flowing freely from the mucous membrane of the stomach. There are several morbid conditions affecting the whole system in which blood is poured out in large quantities from several sources at the same time, and especially from the gastric vessels, such as purpura, sea scurvy, and yellow fever. When this disease is due to a morbid condition of the liver, we get blood passing from the bowels too, the fæces being intimately mixed with it and looking black like tar; this state of things has received the name of *melæna*. When on the subject of pulmonary hæmorrhage we there stated that on our arrival at the consideration of diseases of the stomach we would point out the main features by which we may decide as to the source of the blood, whether it comes from the lungs or stomach. The following are the chief diagnostic characters: when blood is poured out from the gastric vessels into the cavity of the stomach, before the appearance of any blood whatever externally, there is a feeling of nausea and faintness, the skin is pale, the surface of the body cold and bathed in perspiration, there is a sense of weight and uneasiness at the pit of the stomach, and at last blood of a dark fluid character, and sometimes mixed with food, is *vomited* up, and generally some passes at the same time from the stomach into the bowels, and appears again in the fæces; on the other hand, when the bleeding is pulmonary, there is a sense of heat and pricking beneath the breastbone and of bubbling in the windpipe, with a saltish taste in the mouth, and there is some difficulty of breathing, and at last arterial blood of a bright red hue and frothy in character is *coughed* up. The blood coming from the stomach has been rendered black by the action of the acids of the gastric juice.

Treatment.—In the treatment of this affection we must first endeavour to find out the morbid condition giving rise to it, and, if possible, to remove it. When *melæna* is present, the fæces being mixed with dark black tarry blood, hard purging must be resorted to, 5 grains of calomel may be given every night, and followed in the morning by a full dose of senna tea. Various styptic and astringent substances have been proposed to alleviate and check this affection, of which the oil of turpentine is the most active and the best; it may be given thus:—

Take of Oil of turpentine, 2 drachms.
Mucilage of acacia, 3 ounces.
Pure water, 6 ounces.

Mix thoroughly, and give a sixth part every three or four hours.

The patient should be kept cool and perfectly quiet, and if possible in the horizontal posture; he must be allowed plenty of cold drinks, and ice to suck is often found beneficial, and grateful and refreshing to the parched mouth. Some medical men prefer acetate of lead to turpentine. It may be thus given:—

Take of Acetate of lead, 10 grains.
Dilute acetic acid, 2 drachms.
Pure water, 6 ounces.

Mix, and let a sixth part be taken every six hours.

Gallic acid may be tried with good hopes of success. It may be given combined with dilute sulphuric acid, thus:—

Take of Gallic acid, 1 drachm.
Dilute sulphuric acid, 1½ drachm.
Pure water, 6 ounces.

Rub down with a pestle and mortar the acid with the water, then add the dilute acid, and let a sixth part be taken every four hours.

Tannic acid is more active in this kind of hæmorrhage than its allied *substitute gallic acid.* It may be given thus:—

Take of Tannic acid, 2 scruples.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

The tannic acid must be rubbed down with warm water, and the acid added; a sixth part should be taken every four hours.

In mild cases, in which the loss of blood is not profuse, the tannin lozenges of the British Pharmacopœia may be taken, two for a dose, and the dose may be repeated every three hours till the bleeding is quite checked.

Tannic acid acts as a local astringent in this disease, causing the muscular coats of the gastric vessels to contract and stop the bleeding; and in all cases in which local action is required, tannic acid should be given; but when remote action is necessary, as in cases of pulmonary hæmorrhage, and bleeding from the womb and kidneys, gallic acid should be used; for tannic acid in passing through the system has to be converted into gallic acid and grape sugar, and consequently the remote action of the latter is proportionately greater than that of the former. If there be much tenderness at the pit of the stomach, a few leeches may be applied, or counter-irritation set up by blistering plaster. In cases of hæmatemesis vicarious of menstruation, we must not only try to check the bleeding, but seek also to restore the discharge of blood to its proper channel—the vessels of the womb. This may be effected by leeching the groins immediately before the catamenial period, and at the same time placing the feet in hot water, or immersing the patient in a warm hip-bath. Food must be abstained from as much as possible while the stomach is yet in a state of active or passive congestion.

(4.) Indigestion, or Dyspepsia.

We have now arrived at an affection of great importance, and one difficult of description, owing to the various forms which it assumes, and the many different morbid conditions on which it may depend. It is a disease of great importance, because, if the process of digestion be not efficiently performed, the whole health soon becomes impaired, the sufferer loses all his bodily vigour and his mental activity, he becomes low in spirits and hypochondriacal, he is incapable of all kinds of exertion, loses his appetite, and enjoys no kind of food whatever.

The chief symptoms of indigestion are pain and sense of oppression at the pit of the stomach, increased by meals; sour eructations, irregular action of the bowels, white and furred tongue, offensive breath, capricious or no appetite, flatulence and belching, nausea and vomiting, headache and palpitation of the heart, sallow complexion and depression of spirits; the patient is languid, weak, and debilitated, incapable of any bodily or mental exertion, and is very fidgety and irritable. This affection is often supposed to be due to some fault in the action of the liver, and hence denominated "liver complaint;"

abundantly poured out by these organs, and finds its way into the bladder, but is there *retained*, owing to some obstruction to its passage through the urethra; the surgeon soon affords relief in such cases by introducing an instrument called a catheter, and drawing off the accumulated secretion, but no possible means has he of forcing the kidneys into action, and of making them separate the poisonous matters from the circulating blood. When no urine is secreted, a chemical substance called urea, which is one of the components of ordinary urine, acts as a deadly poison upon the system, and especially upon the brain, ending in a condition called *coma*, which resembles a deep sleep, or the apoplectic condition. Suppression of urine is a disease of advanced life, and is more apt to occur in the corpulent.

Causes.—This affection is generally due to congestion of the renal organs, which congestion may be the result of many different causes, such as mechanical injury, or the internal administration of turpentine, or cantharides. This is frequently the immediate cause of death in cases of chronic renal disease. Only a few months ago, we had to watch a poor man who had long been subject to renal disease, and had for some time been dropsical, dying in a state of coma from the injurious effects produced upon his brain by the retention in the blood of urea, and the other constituents of this important secretion.

Treatment.—Persons not skilled in medicine or pathology will be inclined to say, " Give some form of medicine to force the kidneys into action, something to arouse the sluggish organs;" their mode of reasoning thus points to diuretic medicines, such as are generally given in cases of cardiac dropsy to increase the urinary secretion; but in the present affection we must recollect that both the kidneys are in a state of congestion, and that by whipping on the diseased organ we shall increase that morbid condition, and so make matters worse. We must then try to rest the organ by bringing the skin into action by diaphoretic medicines, and the bowels by aperient draughts; the former object may be thus accomplished:—

Take of Solution of acetate of ammonia, 2 drachms.
Sweet spirits of nitre, 2 drachms.
Tincture of henbane, 1 drachm.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken every four hours.

And one of the following powders should be taken twice a day in a little gruel, and the hot-air bath resorted to at night:—

Take of Dover's powder, 1 drachm.

Divide into twelve powders, and let one be taken night and morning.

The congested kidneys may be much relieved by dry cupping and leeching the loins.

(4.) Bright's Disease, or Albuminuria.

The term "Bright's disease" is derived from a distinguished physician who paid great attention to urinary diseases some few years ago, and showed the relation existing between albumen in the urine, and general dropsy. As just anticipated, the urine contains more or less albumen, which is one of the most nutritious constituents of the blood, and in the article on Digestion, contained in the first few pages of this work, the reader will find this chemical substance duly considered in relation to that function; thus by the continued drain of this substance from the blood, the patient's health of course soon suffers, and he finally becomes dropsical. Besides containing albumen, the urine becomes much altered in other respects, as will be hereafter described.

Albuminuria occurs in two forms, the acute and chronic, and these will be described separately.

(*a*) *Acute Bright's disease.*

This form of the disease usually comes on in the course of some one of the exanthemata or contagious diseases, especially scarlatina; it is marked by the following symptoms, pain in the loins, nausea, vomiting, headache, paleness and puffiness of the face, difficult breathing, feverishness, and a frequent pulse. The urine, which demands careful examination, is scanty and high coloured, and contains blood and albumen. The whole body soon becomes dropsical, and one or more of its serous cavities filled with fluid. In the larger proportion of cases, these symptoms gradually disappear, but the disease may run on to the chronic form, or the patient may die of coma or apoplexy.

Causes.—As previously stated, this disease owes its existence to some accidental circumstance interfering with the natural course of one of the exanthemata, especially scarlatina, measles, erysipelas, and typhus and typhoid fevers. It is sometimes due to the effects of cholera, diphtheria, and pregnancy. It is rarely seen in cases of rheumatic fever. Acute Bright's disease may be caused by the simultaneous action of cold and wet upon the system, the exhalation of fluid from the skin being suppressed, extra work is thrown upon the kidney, which organ becomes more or less congested, albumen appears in the urine, the patient becomes dropsical, and all the symptoms of this affection soon follow.

Treatment.—Nearly all our real knowledge of kidney disease is due to the successful and valuable labours of Dr. George Johnson, who has given his experience in this class of diseases in a very able book upon the subject. This author says that we must rest the congested organ, and excite the skin and bowels to take the work of the kidneys upon themselves; the patient should be confined to bed, and placed on a restricted diet, the hot-air bath resorted to every night, and sudorific medicine prescribed.

Take of Solution of acetate of ammonia, 2 drachms.
Sweet spirits of nitre, 2 drachms.
Tincture of henbane, ½ drachm.
Camphor water, 6 ounces.

Mix, and give a sixth part every four hours.

The bowels may be brought into action by the following powders:—

Take of Acid tartrate of potash, 12 drachms.
Resin of scammony, ½ drachm.

Mix, and divide into six powders; one to be taken every second morning.

Should there be much pain in the loins, leeches may be applied, or blood may be abstracted by the cupping-glass. Counter-irritation by mustard poultices is useful in many cases; but mercury should on no account be given in any form of Bright's disease whatever. After the more acute symptoms have passed away, tonics may be given, iron being especially useful.

Take of Sulphate of iron, 15 grains.
Sulphate of quinine, 12 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 8 ounces.

Mix, and let two tablespoonfuls be taken every six hours.

Some practitioners prefer the perchloride of iron, given in the following form:—

Take of Tincture of the perchloride of iron, 1 drachm.
Dilute hydrochloric acid, ½ drachm.
Sulphate of quinine, 10 grains.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

(β.) *Chronic Bright's disease.*

Bright's disease in its chronic form is frequently the result of an acute attack, the kidney being first congested and enlarged, and then undergoing a process of fatty degeneration. But there is another form of chronic Bright's disease in which the kidney is never increased in size, but after death is found small, contracted, and granular on its surface, and the walls of its vessels much thickened. This often occurs in gouty subjects, and has hence been called by physicians "the gouty kidney." This morbid condition of the kidney is exactly analogous to that state of the liver described under the head of *Cirrhosis*, or hobnail liver. The urine is scanty, pale, and of low specific gravity, containing large quantities of albumen, but less than the ordinary proportion of urea. In the gouty form of kidney disease the urine contains less albumen, and dropsy occurs much less frequently than in the fatty kidney. Chronic Bright's disease is characterised by the following train of symptoms:—more or less pain in the back, cramp in the muscles, bleeding from various organs, especially the nose; nausea, vomiting, and great debility. The patient is subject to rheumatism, headache, bronchitis, inflammation of the lungs, heart disease, and apoplexy. Dropsy is one of the most frequent and distressing symptoms, but is oftentimes soon relieved by treatment. The face becomes pale, the eyelids puffy, and the lips and tongue devoid of colour. The organs of digestion perform their function imperfectly; the sufferer grows weaker and weaker, and at last sinks exhausted, or in the comatose or apoplectic condition, as described under the head of Acute Bright's Disease.

Causes.—Gout is a very frequent cause of chronic renal disease; but anything which tends to obstruct the flow of blood through the renal organs will lead to albuminuria. Thus, it may depend upon heart disease or bronchitis, the circulation of the blood being retarded at the right side of the heart, or in the capillaries of the lungs. Intemperance, too, has a very injurious influence upon the system, and predisposes strongly to this disease.

Treatment.—The principles guiding us in the treatment of this important affection are these:—to keep up the patient's strength, to improve the condition of the blood, which is now thin and liquid, from the excess of ammonia it contains; to rest the kidneys, and to relieve all urgent symptoms. The patient should be advised to take change of air and scene, to retire to the sea-coast, or to try the beneficial effect of a sea-voyage. The condition of the blood may be improved by the exhibition of steel; and for this purpose the tincture of the perchloride is best, not only acting as a tonic, but also at the same time exerting a slight astringent effect upon the system.

Take of Tincture of perchloride of iron, 1 drachm.
Dilute hydrochloric acid, ½ drachm.
Sulphate of quinine, 12 grains.
Pure water, 6 ounces.

Mix, and take a sixth part three times a day.

Flannel must be worn next the skin, and cold carefully avoided. Should dropsy become troublesome, it may be relieved by bringing the other excretory organs into action, the skin may be roused by diaphoretics and the hot-air bath, and the bowels brought freely into action by drastic purgatives. Solution of acetate of ammonia is the best sudorific, and may be given thus, combined with nitrous æther:—

Take of Solution of acetate of ammonia, 2 drachms.
Sweet spirits of nitre, 2 drachms.
Camphor water, 6 ounces.

Mix, and let two tablespoonfuls be taken every four hours.

The following powders will excite the action of the bowels:—

Take of Acid tartrate of potash, ½ ounce.
Resin of scammony, 10 grains.

Divide into two powders, and let one be taken every second morning.

Some prefer elaterium to act on the bowels; and it is a very efficient medicine when obtained pure. It may be given in the form of a small pill. It sometimes produces nausea and vomiting.

Take of Elaterium, 1 grain.
Confection of roses, enough to make up 4 pills,

one of which may be taken every morning.

Should the legs become much distended with fluid, the surgeon will make small punctures into them with long needles, and let some of the foreign fluid drain away, and thus give great relief to the uncomfortable feelings of the miserable sufferer. Indigestion may be relieved by appropriate treatment, as described under the head of that affection in the previous pages of this work, and relief may be frequently afforded by the administration of one of the mineral acids, the coats of the stomach being in too alkaline a condition.

Take of Dilute nitro-muriatic acid, ½ drachm.
Infusion of calumba, 6 ounces.

Mix, and let two tablespoonfuls be taken three times a day.

Vomiting and purging are often due to the excretion of some of the foreign matters from the blood through the vessels of the alimentary canal, and must be checked with great care and caution. Mercury, and all kinds of medicine acting on the kidneys must be carefully avoided. Relief is sometimes obtained for the patient by dry cupping the loins, or by the application of mustard poultices. When the renal disease depends upon gout, a great deal may be done for the disease by regulating the patient's diet. He must give up his alcoholic drinks, and eat less meat. He will require warm clothing, and plenty of exercise in the open air. When the patient is much debilitated, purgative medicines should not be ordered, but the skin must be acted upon, and a nutritious and stimulating diet allowed, consisting of beef tea, broth, milk, eggs, and wine, or other stimulants if necessary.

(5.) BLOODY URINE, OR HÆMATURIA.

Just as jaundice is a symptom of liver disease, so blood in the urine is a most important sign of some morbid condition of the kidney.

Causes.—The urine contains blood in some of the forms of acute Bright's disease, and frequently, also, during the course of typhus and typhoid fevers, smallpox, and other diseases of this class. It may depend upon poisonous materials that have been swallowed or inhaled, as turpentine, cantharides, and arseniuretted hydrogen gas. In patients suffering from purpura, or scurvy, the urine is frequently mixed with blood. When a person has a calculus in his kidney, by active exercise such as riding on horseback, some of the smaller capillaries of the kidney become injured, and blood escapes and becomes mixed with the urinary secretion. In very rare instances it has been dependent on malignant growths, or vicarious of some hæmorrhage which has been recently suppressed.

Treatment.—The patient should be confined to bed, and his diet made nutritious, but not stimulating. Should there be much pain, cupping in the loins will give relief, and some astringent mixture must be ordered.

Take of Gallic acid, 1 drachm.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

When the patient is much debilitated, the tincture of the perchloride of iron may be given, combined with dilute hydrochloric acid, thus:—

Take of Tincture of the perchloride of iron, 1½ drachm.
Dilute hydrochloric acid, ½ drachm.
Sulphate of quinine, 15 grains.
Pure water, 8 ounces.

Mix, and give an eighth part three times a day.

Some practitioners rely upon the astringent effects of dilute sulphuric acid, given thus:—

Take of Dilute sulphuric acid, 1 drachm.
Infusion of quassia, 6 ounces.
Tincture of lavender, 2 drachms.

Mix, and give a sixth part every six hours.

If the blood comes from the bladder, injections of cold water will be beneficial, and small doses of turpentine may be thus given:—

Take of Turpentine, 2 drachms.
Powdered gum acacia, 3 drachms.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

Turpentine is not a safe remedy if the kidneys be involved in the mischief. Should the bleeding depend upon purpura or scurvy, lemon juice and fresh vegetables should be liberally allowed.

When blood appears in the urine, it is most important to determine from what part of the urinary apparatus it is poured out. It may have come from the vessels of the kidney, bladder, or urethra. When blood is poured out from the kidney it is thoroughly diffused through the urine, and is in smaller quantities than when it makes its escape from the vessels of the bladder; and there are other signs, such as fibrinous casts of the kidney tubes, which are readily appreciated by the microscopist, but which it is unnecessary to describe to the general reader.

DISEASES OF THE BLADDER.

(1.) IRRITABILITY OF THE BLADDER.

This affection consists of a frequent inclination to pass water, and may depend upon some irritation in the lower bowel or womb, such as piles or worms, or the pressure of the gravid uterus. Sometimes it is the result of irritating urine; and in cases of this kind, the urine must be submitted to careful examination, and its irritating properties removed. If it be too acid, alkalies may be given; and if alkaline, mineral acids. If there be a purulent sediment on standing, the infusion of buchu will do good.

Take of Infusion of buchu, 6 ounces.

Let a small wine glassful be taken three times a day.

In some cases tincture of cantharides has proved very useful.

Take of Tincture of cantharides, ½ drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

Should the patient be suffering from piles or worms, he must be placed under the appropriate treatment for these affections.

(2.) PARALYSIS OF THE BLADDER.

Sometimes the muscular coat of the bladder loses its power of contraction, just as the muscles of the arms and legs become palsied; and the most frequent cause of this condition is some injury to the brain or spinal cord. It is seen very often in cases of typhus fever. When the bladder has been distended from the retention of urine the muscular coat loses its power, and hence it becomes injurious that persons should hold their water beyond a certain time. In many cases of fractured leg the bladder is rendered unable to expel its contents. When the organ becomes thus effected, the urine is either retained or dribbles away.

Treatment.—In many cases the surgeon's aid will be necessary to draw off the secretion as it accumulates; and the bladder should never be allowed to become distended. The lost power may be restored to the muscular coat by the administration of tonics.

Take of Tincture of the perchloride of iron, 1 drachm.
Sulphate of quinine, 10 grains.
Dilute hydrochloric acid, ½ drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

In some cases strychnine is more useful than steel.

Take of Solution of strychnia (Pharmacopœia), ½ drachm.
Tincture of lavender, 1 drachm.
Pure water, 6 ounces.

Mix, and give a sixth part three times a day.

(3.) Inflammation of the Bladder, or Cystitis.

Inflammation of the bladder is characterised by the following symptoms:—Pain at the lower part of the body, frequent micturition, feverishness, nausea, vomiting, and depression of spirits. The pain is increased by pressure and by the contact of urine with the mucous lining of the affected viscus. If the inflammatory action be not subdued, the system becomes much reduced, and typhoid symptoms set in. The skin is pale, and bathed in cold perspiration; the pulse is quick, feeble, and irregular, and there is low muttering delirium. The features grow sharp and ghastly, and the countenance is expressive of intense anxiety; and the patient continues to grow weaker, and at last dies in a state of exhaustion.

Treatment.—The pain must be relieved by hot baths and hot fomentations; opium should be given freely, and the bowels gently acted upon by mild aperients; the diet must be simple and unstimulating, and alcoholic drinks avoided.

RHEUMATIC FEVER, OR ACUTE RHEUMATISM.

This disease consists essentially of inflammation of the fibrous tissue about the various joints of the body, and is in many cases complicated with inflammation of the fibrous tissue of the heart. It sets in with slight cold and fever, and the joints become stiff, red, swollen, and tender. The patient is perfectly helpless, the slightest movement on his part causing the most intense pain; the tongue becomes coated with a thick whitish-brown fur, and has the appearance of a thick blanket; the body is bathed in an abundant acid perspiration; the pulse is full and frequent; there is headache, and the patient complains much of thirst. The bowels are confined, and the urine scanty, high-coloured, thick, and turbid, and acid in reaction. One most remarkable characteristic of the disease is its tendency to shift—to leave one joint and fly to another. Acute rheumatism is frequently attended with other diseases or complications: thus, the inflammatory action often extends to the heart, and permanently damages this important organ; but this needs no more remarks, as the subject of pericarditis has already received due consideration. Sometimes the lungs become affected during the course of this disease, bronchitis, pleurisy, or inflammation of their substance setting in. In some cases cerebral symptoms show themselves, and in others the fibrous tunic of the eye becomes involved in the inflammatory mischief. Rheumatic fever generally occurs between the fifteenth and fortieth year, and is more liable to extend to the heart when it happens to young and delicate subjects.

Causes.—The most frequent cause of acute rheumatism is exposure to cold and wet, and it may be frequently traced to sleeping in damp beds, or to the putting on of damp clothes. It is very often due to sudden alternations of temperature, and frequently occurs in the summer months. It sometimes follows closely upon scarlet fever, and one or two other diseases.

Rheumatic fever must be carefully distinguished from gout, and this may be easily done by attending to the following well-marked and characteristic points:—Gout is more common in middle aged people who have indulged freely in malt liquors; but acute rheumatism affects those of a tender age and who are naturally delicate. In gout there is more swelling, tenderness, and desquamation of the joints than in rheumatic fever, and there is no tendency to *metastasis*, or shifting from one joint to another, or to cardiac complications. Acute rheumatism generally attacks the larger joints, gout preferring the smaller ones, especially those of the toes and fingers. The gouty patient's joints soon become affected with chalkstones, and he does not suffer from the acid perspirations of acute rheumatism. Again, a great deal may be learnt by inquiring into the history of the attack, the supervention of an attack of gout being highly characteristic of the disease. It comes on usually in the middle of the night, and often affects the great toe, as we shall see when we come to the description of that painful affection.

Treatment.—Various have been the methods of treating rheumatic fever; and even up to the present day the best mode of cure is hardly decided upon. The plan most generally resorted to is to give alkalies freely, upon the supposition that the system is overloaded with an excess of acid, by some supposed to be lactic acid. As evidences of this fact we have, during the disease, the urine in a very acid condition, and the profuse perspiration in which the patient is bathed is intensely acid in reaction, and of a very sour, disagreeable odour: so that to a person who is familiar with rheumatic fever this would be quite sufficient for him to form a diagnosis of the disease from which the patient is suffering. Bicarbonate of potash is the remedy most in use among medical men.

Take of Bicarbonate of potash, 2 drachms.
Camphor water, 6 ounces.

Mix, and give a sixth part every three hours.

Or, bicarbonate and nitrate of potash may be given together, thus:—

Take of Bicarbonate of potash, 2½ drachms.
Nitrate of potash, 80 grains.
Camphor water, 8 ounces.

Mix, and give an eighth part every three hours.

Most practitioners give opium at the same time with either of the above mixtures.

Take of Powdered opium, 6 grains.
Sulphate of quinine, 12 grains.
Confection of roses, sufficient to make up 12 pills,

one of which must be taken twice or three times a day.

Opium thus given quiets the system, and relieves the pain; this drug too will prove itself useful should any cardiac complication show itself; it is best given with quinine, for it is then less apt to cause nausea.

When the heart becomes affected, the disease has assumed a very terrible aspect, for this complication will almost certainly end in chronic and progressive heart disease; the acute inflammation of its covering membrane must be treated as described under the head of Pericarditis. The affected joints should be wrapped in cotton wool, and the following alkaline lotion has been in some cases applied:—

Take of Carbonate of soda, 1 drachm.
Battley's solution of opium, 3 drachms.
Pure water, 6 ounces.

Mix, and let a lotion be made, with which the affected joints must be constantly kept wet.

It is very rarely necessary to apply leeches to the joints. Dr. Davies trusts entirely to the application of blisters round the limb above the affected joint in the treatment of this disease. The diet must consist of arrowroot, gruel, beef tea, and broth, and if the powers of the system should begin to flag, or delirium should set in, stimulants will be necessary, wine and brandy being freely allowed. The patient should be clothed in a flannel gown to absorb the acid perspiration. Lemon juice has been much praised for its efficacy in rheumatic fever, but has not been attended with the success expected from it upon its first introduction. The older practitioners resort to free bleeding in this disease, and give full doses of calomel and opium; but these lowering and active remedies are given up by the younger members of the medical profession who are now in practice, it having been satisfactorily proved that acute rheumatism may be cured by much safer means. The bowels must be regulated by some mild aperient, such as castor oil, or the compound colocynth pill.

Take of Compound colocynth pill, 18 grains.
Calomel, 12 grains.

Beat into a mass, divide into six pills, and let two be taken occasionally as required.

Colchicum has no specific effect upon this disease, as we shall presently see it has upon gout.

CHRONIC RHEUMATISM.

The most common form of chronic rheumatism is known as *lumbago*, consisting of pain and tenderness in the fascia and large muscles of the back; other forms are common also, as sciatica or rheumatism, affecting the sciatic nerve in its course down the back part of the thigh. The pain accompanying this disease of the muscles is much increased by putting the affected tissues into action, or by pressure exerted upon their substance.

Treatment.—Persons who are subject to this troublesome affection should take great care of themselves, avoiding all sources of cold, and wrapping the body up in warm clothing, flannel in all cases being worn next the skin. The most useful remedy we have is the iodide of potassium, especially when combined with an alkali, thus:—

Take of Iodide of potassium, ½ drachm.
Bicarbonate of potash, 2 scruples.
Decoction of cinchona, 6 ounces.

Mix, and take a sixth part three times during the day.

At the same time this medicine is taken internally, the affected muscles should be vigorously rubbed with the following liniment:—

Take of Spirits of camphor, 2 drachms.
Turpentine, 2 drachms.
Strong solution of ammonia, 1 drachm.
Opodeldoc, 3½ ounces.

Mix and shake thoroughly, and rub it into the parts affected morning and night.

If the disease assume an intermitting character, quinine and iron will be useful.

Take of Sulphate of quinine, 12 grains.
Sulphate of iron, 10 grains.
Dilute sulphuric acid, ½ drachm.
Pure water, 6 ounces.

Mix, and give a sixth part three times a day.

When the secretions are very acid, alkalies should be tried.

Take of Solution of potash, 1 drachm.
Decoction of cinchona, 6 ounces.

Mix, and let a sixth part be taken three times a day.

Many cases of chronic rheumatism are much benefited by the use of the guaiacum mixture of the British Pharmacopœia.

Take of Mixture of guaiacum, 6 ounces.

Let a sixth part be taken every six hours.

Blisters and iodine ointment applied over the affected muscles will greatly assist the above remedies in their action, and the hot bath will materially add to the comfort of the patient.

GOUT.

Gout consists of a severe piercing pain affecting various joints of the body, especially those of the hands and feet; occurring at uncertain intervals, and generally preceded by more or less derangement of the stomach, as flatulence, nausea, vomiting, heartburn, acid eructations, and water brash. The patient goes to bed at his usual hour, a little dyspeptic perhaps, or apparently in his usual state of health, he gradually passes off to sleep, but about midnight is awoke by an acute, darting, inflammatory pain in one or other joints of his body, and most frequently in the *ball* of the great toe; the affected joint is red, swollen, œdematous, and tender, and the pain so acute that the sufferer is unable to bear the weight of the bedclothes upon the tender joint; after continuing for a certain time it remits, and the patient falls to sleep, and wakes again restored to health, till the onset of another attack; as the inflammation subsides, and the swelling goes down, the outer portion of the skin falls off the affected joint like the desquamation of the cuticle after scarlatina. When gout first attacks a person, it does so less frequently than in the later periods of the disease, for upon its having permanently implanted itself upon the system its attacks grow more frequent, till at last the patient is scarcely ever free from them; every little excess in eating or drinking being sure to give rise to this painful affection; and as the attacks grow more frequent, so they increase in intensity, the disease being no longer confined to one joint, but both the hands and feet begin to suffer. Gout frequently alternates with other internal affections, especially with disarranged states of the digestive organs.

The points in which gout differs from rheumatic fever, and by which the two diseases may be discriminated, have been already pointed out under the head of the latter affection. Sometimes gout attacks the internal organs, and especially the stomach, the patient suffering from nausea, vomiting, and spasmodic pain in the abdomen, with a peculiar feeling of distress and anxiety. At other times the heart becomes affected, the breathing being difficult, and the patient in a state of syncope or fainting. In very rare cases apoplexy is the result of an attack of gout. In persons who have been subject for a lengthened period of time to this painful and troublesome affection, other organs become implicated: thus, we meet with gouty inflammation of the testicle, and a peculiar inflammation of the eye, owing its origin to the same cause. Gout is in all respects a hereditary disease, being transmitted from father to son and grandson, and frequently making its appearance in a great many of the same family. There is a peculiar build of body which nurses up the gouty predisposition: thus, men who are stout, plethoric, and of full habit, are much more liable to its ravages than those who are slim, thin, and bloodless. By careful regimen, persons who are by birth inheritors of this disorder may be protected from its injurious influence; while, on the other hand, those who are not by nature predisposed to its attack may engender the affection by free living, sedentary and indolent lives, and free indulgence in malt liquors. Wine and beer predispose much more strongly to gout than spirituous drinks, and although the affection under consideration is essentially one of the upper class, and has been on that account delighted in by some underwitted and weak-minded persons, yet it is frequently seen among working men who are in the habit of indulging freely in beer and porter, especially among brewers' draymen, who always drink freely of the malt liquors with which their daily avocations bring them into contact. People who are liable to attacks of gout may ward them off by free exercise in the open air.

An attack of gout may be brought on by any free indulgence; and in some cases it is the immediate result of mental emotion. When a joint is subject to gouty influences, external injury will often excite an attack: thus, any blow upon the gouty great toe, or even the pressure of a tight shoe, will be sufficient; and there are cases on record in which gout has been the result of the application of a mustard poultice.

Treatment.—As quinine acts as a specific remedy in the case of intermittent fever, and all diseases taking on the intermitting character, such as tic douloureux, sciatica, and other forms of neuralgia, so colchicum is a specific in most cases of gout. It is best given in the form of the wine of colchicum, which is prepared from the seeds, and it should be combined with an alkali, thus:—

Take of Wine of colchicum, 1½ drachm.
Bicarbonate of potash, 2 drachms.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

The pain in the joint may be relieved by bathing the part affected with warm water, and by wrapping it in a warm bran poultice. During the paroxysm the diet must be restricted to tea, toast, arrowroot, and gruel, all animal food being avoided for a time. The bowels should be freely acted upon by calomel and colocynth pill, thus:—

Take of Calomel, 24 grains.
Compound colocynth pill, 36 grains.

Beat into a mass, and divide into twelve pills, two of which may be taken occasionally at bedtime as required.

In some cases iodide of potassium has afforded relief.

Take of Iodide of potassium, 24 grains.
Bicarbonate of potash, ½ drachm.
Decoction of cinchona, 8 ounces.

Mix, and take two tablespoonfuls three times during the day.

There are two things to be kept in view in treating this disease—viz., a restricted diet and a large share of habitual exercise on the part of the patient, and if these be insisted upon and rigidly maintained, the gouty symptoms will soon yield to the above remedies.

When gout attacks the stomach, a mustard poultice or turpentine stupes should be placed over the seat of the pain, and some stimulant given, the best form being a glass of hot brandy-and-water. If there be any acidity, antacids should be ordered.

Take of Carbonate of magnesia, 1 drachm.
Powdered rhubarb, 12 grains.
Peppermint water, 6 ounces.

Mix, and let two tablespoonfuls be taken every six hours.

If the pain be very severe, and is not soon relieved, opium may be given, and warm enemata thrown up the bowels.

Take of Laudanum, 40 minims.
Pure water, 3 ounces.

Mix, and let half the mixture be taken immediately, and the other half in three hours if the pain be unrelieved.

When a person is of a plethoric and corpulent build, and comes of gouty ancestors, he should be advised to take an active purgative every morning. The following is a useful form:—

Take of Sulphate of magnesia, 1½ ounce.
Carbonate of magnesia, ½ ounce.
Peppermint water, 6 ounces.

Mix, and take a sixth part every morning.

AGUE, OR INTERMITTENT FEVER.

A paroxysm of ague is divided by scientific writers into three consecutive stages, called respectively the cold, hot, and sweating stage:—The first, or cold stage, is marked by the following symptoms: a sensation of uneasiness and distress at the pit of the stomach, the patient is languid, tired, debilitated, and incapable of exerting himself; he occasionally stretches his limbs, and is continually yawning; he soon begins to feel cold chills running down his back, and gradually extending over his whole frame; the skin turns blue, and is cold to the touch, the surface being raised into little roughened prominences, giving rise to the characteristic appearance called in popular language "goose skin," and in technical terms *cutis anserina;* the features shrink and turn pale, the lips and nails assume a blue colour, and the fingers are much drawn up, so that rings, which previously fitted tightly, now fall off; the urine is scanty, the tongue white and furred, the respiration is hurried, and the teeth chatter. By degrees this state of things passes into the hot stage: flushes of heat begin to wander over various parts of the body; the skin, previously rough and pale, regains its natural smoothness and colour, the face becomes hot and plethoric-looking, the features regain their ordinary condition, the countenance assumes its natural expression, and the pulse returns to its normal frequency and fulness.

After the skin has remained in this hot and dry state for a short space of time, perspiration begins to break out in various parts of the surface, especially upon the face and forehead, the thirst is allayed, the breathing becomes natural, and the urine secreted in its healthy proportion.

The disease does not always run so regular a course as described above; but one or more of the stages may be left out, and rare instances have been known in which the order of the stages has been reversed. The aguish paroxysm returns with great regularity, and this is one of the most interesting points in the history of the disease, and one very difficult to account for, and so has been thought, as is usual in such cases, to be due to many different chains of circumstances. By the time of the regular return of the paroxysm, ague has been divided into three different species, called quotidian, tertian, and quartan ague; and we shall now proceed to say a few words about each of them.

The time elapsing between the end of one paroxysm and the beginning of another is called an *intermission*, and that between the commencement of one fit and the beginning of another an *interval*. In the *quotidian* form of ague, fits occur every day, and usually in the morning, lasting from ten to twelve hours, and, of course, having the shortest interval. Its cold stage is short; but the whole paroxysm lasts longer than those of the other two species. The quotidian form most frequently occurs in the spring, and is easy of cure. In *tertian* ague, the attacks recur every second day: thus, a person being attacked on Monday, will have a return of the disease on the following Wednesday. It commences about noon, and is the form most commonly met with. *Quartan* ague occurs in paroxysms which return every third day: a person who has a fit on Monday, will have another on Thursday. It is the most severe form of the disorder, and the most difficult to cure. It occurs late in the afternoon, and as it has the longest cold stage, so it has the longest interval. It prefers the autumnal months for its attacks, and often proves fatal to life.

There are various modifications of these three forms described by scientific writers, and occasionally met with in actual practice, but which need no remarks in a work of the present kind, the three detailed above being those commonly occurring, and are types of the disease. Sometimes intermittent fever occurs in an erratic form, accompanied by no well-marked symptoms; but by its capricious behaviour is easily distinguished, and readily cured by the experienced medical practitioner.

Ague is, comparatively speaking, rare in this country, the influence of malaria being felt more in foreign climates. It generally happens to men, and those who have already arrived at the middle period of life; but in some rare instances it affects children, and it has been seen in the newly-born infant. The most frequent complication of intermittent fever is an enlarged state of the spleen, or ague-cake, which is due to the internal congestion going on during the cold stage of the disease. Debility and cold are the chief predisposing causes; but the exciting and main cause is the influence of marsh miasmata. In persons who have already suffered from a previous attack of ague, cold, and especially the east wind, is very likely to bring on another. As the influence of malaria is so powerful, and its effects so widely felt, we think it part of our duty to give a few broad hints as to the nature and character of these poisonous effluvia, and to lay down certain simple rules and facts, by which their noxious influence may be avoided by those whose avocations place them necessarily in a district pervaded by them. The subtle poison of marshy districts is not developed except under certain circumstances. The temperature must not be reduced below 60°, there must be more or less moisture in the atmosphere, and the presence of air and earth are both essential, for we do not find sailors suffering from miasm while at sea: it is only when they arrive on shore that they begin to feel its influence. Some have supposed that the poisonous substance is due to animal or vegetable decay; but the balance of evidence is against such an origin, and certainly the injurious effects of miasmata are felt where there can be no vegetation. Ague is most rife in districts which are composed of a loose sandy soil, and most frequently occurs just after the land has been overrun with water, and afterwards rapidly dried in the sun. We shall see as we proceed in the description of the exanthemata, or contagious diseases, that there is in each a certain period of incubation, or a period during which the poison lies dormant in the body after its reception into the blood; and such is the case in intermittent fever, when the poisonous matter is less concentrated; but in other cases it acts as a deadly poison, its operation being instantaneous. The effects of the marsh poison are much regulated by the height of the place and the temperature of the external atmosphere, giving rise in one place to yellow fever; in another, situated more highly, to remittent fever; and in others, more highly situated still, its influence is hardly perceptible. Thus, Dr. Watson, in his admirable work on the Practice of Physic, from which we have received many valuable suggestions, quotes the following case in point: The British garrison was dispersed in three separate barracks in Antigua, one on an eminence named Monks' Hill, 600 feet above the level of the marshes; the other two were situate on an eminence called the Ridge, one at the height of 500 feet, and the other at the height of 300 feet. It was found that the malaria in the level plain caused continued or yellow fever, at the height of 300 feet it gave rise to remittent fever, and at the height of 500 feet it was hardly felt. Like the poison of typhoid or gastric fever, the influence of malaria is more readily perceived by strangers than by natives, and the negro appears to be proof against its ravages. The following facts, as well as those just described, should be carefully borne in mind by those resident in an aguish district. The malaria poison is most deadly at night, and it travels close to the ground, where of course it becomes greatly concentrated; it is moved along by the wind, and may by its influence ascend a hill, and pass over the adjoining country; its influence is less felt in well-cultivated and thickly-populated districts. As the deadly poison remains close to the ground, the lower rooms of a house in such a district are not so safe as those more highly situated, and it would be injudicious on the part of any man to lay himself down to sleep on the ground in such a country, especially during the silent hours of night, when the influence of the poison is most virulent. The marsh poison is greatly attracted by the thick foliage of trees, and consequently becomes much more concentrated in woody districts, and hence it is dangerous to go under trees which are growing thickly together.

Treatment.—During the cold stage the shivering of the patient must be relieved by diluents and cordials, the body and limbs should be warmly wrapped up, and the warm bath will give great relief. Emetics have been recommended, but they are not generally necessary. Blood-letting is never resorted to in this country amongst the younger members of the medical profession, and the older members very rarely resort to it; but in hot climates, perhaps, it may be more necessary. The best kinds of diluents are barley-water, tea, arrowroot, and gruel; in some cases the hot-air bath has been used in the cold stage with great comfort to the shivering patient. When the hot stage has fairly set in, cooling drinks may be allowed, and the surface of the body sponged with tepid water, and when sweat begins to moisten the surface, the trunk and limbs must be rubbed dry with towels, and the sweating encouraged by tepid drinks. During the intervals the bowels must be regulated by brisk purgatives.

Take of Sulphate of magnesia, 12 drachms.
Carbonate of magnesia, 3 drachms.
Peppermint water, 6 ounces.

Mix, and take two tablespoonfuls when required.

Quinine and the various medicinal preparations of arsenic are the two remedies we have then to place our trust in, the former being very efficacious but expensive, the latter very useful but requiring care in their administration; quinine may be given thus:—

Take of Sulphate of quinine, 18 grains.
Dilute sulphuric acid, 1 drachm.
Compound tincture of lavender, 2 drachms.
Pure water, 6 ounces.

Mix, and let two tablespoonfuls be taken every four hours.

In addition to the above mixture, a draught containing a larger dose *of quinine should* be taken a few hours previous to the commence*ment of every* paroxysm.

Take of Sulphate of quinine, 10 grains.
Dilute sulphuric acid, 20 drops.
Tincture of orange peel, ½ drachm.
Pure water, 2 ounces.

Mix, and take the draught as directed above.

When quinine is given in large doses, or in smaller quantities repeated at intervals, the following symptoms make their appearance: buzzing noises in the ears, headache, and specks floating before the eyes, with nausea and general feelings of uneasiness. When these signs are present, the tonic plan must be stopped for a short time.

Arsenic may be safely given thus:—

Take of Fowler's solution of arsenic, 20 drops.
Infusion of gentian, 8 ounces.

Mix, and take an eighth part three times a day.

When any unpleasant symptoms arise, such as nausea, vomiting, purging, watering of the eyes, itching of the eyelids, and headache, the arsenic should be stopped.

Salicine, a salt derived from willow bark, has been well spoken of in the treatment of this disease, but on trial it has proved itself far inferior to quinine: it may be thus given:—

Take of Salicine, ½ drachm.
Pure water, 6 ounces.
Tincture of cardamoms, 2 drachms.

Mix, and give a sixth part three times a day.

Many other remedies have been proposed, such as charcoal, piperine, and sulphate of zinc, but are quite unnecessary when we can obtain either arsenic or quinine. In aguish districts, persons should take some support before going out into the open air, and a generous diet should at all times be allowed, to ward off the injurious influences of such localities. Chamomile flowers have been used by some physicians in this disease, and are well spoken of by Heberden.

TYPHUS FEVER.

We have now come to the consideration of continued fever, of which there are three species deserving of consideration, viz.: typhus, typhoid, and relapsing fevers. The first two were for a great many years looked upon as one and the same disease, but quite recently have been separated, and aptly described by the pen of Dr. Jenner.

Typhus fever is divided into weekly periods, each of which is marked by its own characteristic symptoms. When a person has been placed under the influence of typhus poison, like most of the other exanthemata there is a certain period in which that poison lies dormant in the blood, called the period of incubation; then after this space of time has passed by, the symptoms of the first week set in, after some preliminary signs of impaired health have been evinced by the poisoned invalid. The period of incubation in typhus fever is very variable, the symptoms may show themselves in a few hours after infection, or may be delayed as long as nineteen days. The preliminary signs that a patient is about to suffer from an attack of low fever are chiefly referable to the nervous system; there is lassitude, giddiness, headache, nausea, and loss of appetite; the patient is pale and his features are drawn up, he passes sleepless nights, and is incapable of any exertion, being easily tired; there is a dusky look about his countenance, and he is very drowsy.

The first week of the disease is marked by the following symptoms: rigors, chilliness, pain in the back and limbs, nausea, vomiting, headache, thirst, coated tongue, restlessness, a quick pulse, and hurried respiration. There is a peculiar look in the face of the patient, he takes little or no notice of what is going on about him, he lies upon his back and is very feeble, there being great muscular depression. At the end of the first week the headache ceases, and low muttering delirium sets in, not the acute active delirium of typhoid fever, but the patient talks quietly to himself, he mutters so that he can scarcely be heard by others, he wanders in imagination to countries afar off, or is perhaps in deep conversation with some friend who is abroad, and whom he has not seen for years. This delirium has a very peculiar effect upon any person unaccustomed to such scenes on entering the ward of a large hospital, where two or three, amid the silence that reigns around, are lying ill with typhus, and wrapped in their own musings, which form so great a contrast with the violent and noisy delirium of gastric fever. As this delirium sets in the patient grows weaker and weaker, till at the end of the second week he is so prostrate that it is impossible for the most observant medical attendant to say which way matters are going to turn, the patient lies upon his back, being unable to turn himself upon either side, his tongue becomes dry and brown or even black, the teeth are covered with sordes, and the pulse is very weak, frequent, and irregular. Like the other exanthemata, typhus fever is marked by a peculiar rash, which shows itself upon the trunk and limbs about the seventh or eighth day of the disease; it resembles in appearance the rash of measles, and has hence been called the *rubeoloid* rash, others call it the mulberry rash, from its colour, which approaches that of the ordinary mulberry: it consists of a number of spots about the size of pins' points, irregular in form, and having no defined margins. They are flattened on their summits, and disappear on pressure. Towards their margin they are somewhat raised. There is only one crop produced, and this disappears during the third week. In severe cases the eye becomes dull, the patient is scarcely able to speak or swallow, the fæces are passed involuntarily and unknown to the patient into the bed, and he sees flies moving about before his eyes, and in trying to catch them picks the bed clothes. This is looked upon as of ill omen, and is technically called *floccitatio*. After the fourteenth day, which is the turning-point of the disorder, the patient either rapidly improves, or soon sinks, dying gradually of exhaustion, or perhaps of some cerebral or pulmonary complication. When the disease is about to terminate in recovery, the tongue cleans, delirium ceases, the temperature of the body is reduced, the pulse and breathing become natural, and the features return to their ordinary condition. During the last few months a great deal has been said and written, as previously stated in the foregoing pages of this work, on the use of the thermometer in disease, and here we find it giving us great assistance, enabling us to say that low fever is present, and to form in our own minds an estimate of its severity, and the probable termination of the case, whether in recovery or death: thus, the normal temperature of the body varies from 98° to 100°, and if in typhus fever the thermometer, placed in the armpit of the patient, shows a rise to 104°, 105°, or even 106°, the attack is a severe one, and we must be guarded as to what we think about the result. Like small-pox, the severity of typhus fever is proportionate to the abundance of the eruption; and hence we have another means of forming our prognosis. About the fourteenth day of the disease, which is, as previously stated, the crisis, the temperature begins to fall, and gradually descends till the normal standard of health is arrived at.

Typhus fever must be distinguished from measles, acute inflammation of the brain, and delirium tremens, which diseases it closely resembles. The points of difference between it and gastric fever will be pointed out under the head of the latter affection.

Measles may be diagnosed from typhus by the following characteristic points: it occurs in children, and is preceded by symptoms of cold in the head; the little patient has a copious flow of tears from the eyes, he sneezes and coughs, and his voice is thick. Typhus fever, on the other hand, very rarely occurs in children, and is marked by none of the symptoms of ordinary catarrh; the eruption of measles is brighter, and more papular than that of typhus fever. In acute inflammation of the brain, there is no heat of skin, and it has just been said that in typhus the temperature rises to 105°, or even 106°; and hence the thermometer will materially help us in discriminating these two affections. In cerebral inflammation there is no rash; but there are headache, squinting, local palsy, and convulsions, none of which are present in typhus fever. In the delirium of drunkards there is no rise of temperature: the tongue remains moist, and there is no rash scattered over the body; and thus this disease can hardly be mistaken for an attack of fever, especially if we carefully inquire into the previous history of the patient who has fallen under our care. The mortality of this disease depends much upon the age of the patient: thus, of cases occurring between the tenth and twentieth year hardly any prove fatal; but as the patient increases in age, so the proportion of deaths increases; and when typhus fever seizes upon persons who have arrived at the age of fifty or sixty, more than half the cases die. The mortality is increased by the previous habits of the patient, and by accidental circumstances: thus, intemperance, privation, and previous disease frequently lead typhus to a fatal termination. In some cases Bright's disease sets in, and in others the lungs or brain become affected, the patient dying of some inflammatory attack in the organs of respiration, or from effusion into the substance of the brain.

Causes.—Typhus fever is essentially due to the presence in the blood of some morbid or poisonous substance, and is conveyed about by contagion, although this fact was doubted in former days, and even at the present time remains a vexed question in the minds of some few men. It may be carried into the blood through the lungs in the act of respiration, or it may be swallowed. It never spreads from one house to another, and is not conveyed very readily by persons visiting the patient. Its influence does not radiate very far from its centre of action; and when a patient affected with the disease is placed in a large airy ward, the poison is so diluted that persons can be placed in the adjoining bed without suffering any injurious effects. Generally speaking, an attack of typhus fever frees the patient from any future attack; but this rule will not hold good in all cases, either in typhus fever, or any of the other exanthemata.

Treatment.—It will be hardly necessary to say that there is no known antidote to the poison of typhus fever; and hence the chief duty of those undertaking the responsibility of treating so severe and fatal a disorder, consists of *guiding* the attack in its proper course, not of trying to stop it, but acting, as it were, as a pilot to the disease, warding off all complications, and relieving any urgent symptoms that may arise. Continued fever is one of those diseases which exhibit a strong tendency to terminate in health after running a certain course; but it is very apt to be attended with many untoward complications, which are soon relieved at the hands of a skilled physician and an experienced and well-conducted nurse.

The patient should be placed in a large, airy, well-ventilated room, all curtains and bed-hangings being taken down, and the carpets removed. If the weather be cold, a fire should be lighted to keep up a moderate temperature in the sick chamber, and create a current of fresh air through its infected atmosphere; if the season be hot, and there are no pulmonary complications, one of the windows should be constantly open, and in the winter months the bedroom door must never be closed. The bed on which the patient is to lie during his illness should be rather hard, such as a good mattress or spring-bed, feather beds not only being useless, but adding to the discomfort and weakness of the invalid, who is already prostrate, by increasing his heat of skin and keeping off the fresh air. The friends should be very careful in their selection of a nurse, one who has had some experience in febrile diseases is to be preferred, for so much of the welfare of the patient depends upon her untiring care and constant attention; thus a person suffering from this fearful disease requires attention every moment during the twenty-four hours, at one time wanting beef tea, at another wine, and so on during the whole day and night. Some disinfecting fluid should be sprinkled about the floor of the room, and saucers containing some of the same fluid must be placed on various tables and shelves, and in various corners of the sick-chamber. The best substances for this purpose are chloride of lime, chloride of zinc, in the form of a weak solution, or a moderately strong solution of permanganate of potash. By the constant use of one or other of these clarifying fluids, we seek to disarm as much as possible the disease of its deadly infection, and to overcome the peculiar and horrifying scent with which it is attended. After all these sanitary arrangements and precautions have been duly attended to, the next important part of the treatment is to see that the patient is well supported with nutritious food, given in small quantities every hour in bad cases, and every half-hour in the worst attacks. The diet must be nutritious and stimulating, consisting of beef tea, broth, milk, eggs, arrowroot, wine, and brandy, thirst being allayed by toast and water, or lemonade. Brandy and wine will have to be allowed with a lavish hand, especially when the sufferer is well advanced in years, children not requiring so much stimulants as those who are older. Thus, in mild cases, 6 ounces of brandy should be given during the day; but in cases which are more severe, 12 ounces will not be too much. Some observers have thought that the fever may be cut short by emetics given in the first instance, or by sponging the body with tepid water; but such is not found to be the case. In former days, patients suffering from this disease were freely bled; but at the present time this remedy would act as a deadly poison to patients suffering from the depressing influence of typhus poison. Mercury, too, was in favour with our forefathers; but has now gone quite out of use as a cure for this affection. At the very onset of the disease the bowels may be briskly purged by a mild aperient, the hair of the head should be cut close, and cold lotions applied to the heated scalp. Quinine is one of the most useful drugs we have in the treatment of this disorder; and as it has been demonstrated that there is always an excess of ammonia in the blood of patients suffering from typhus, and the blood consequently in too alkaline a state, it may be advantageously combined with one of the mineral acids, the nitro-muriatic being the one generally prescribed by medical practitioners.

Take of Sulphate of quinine, 12 grains.
Dilute nitro-muriatic acid, ½ drachm.
Compound tincture of lavender, 2 drachms.
Pure water, 6 ounces.

Mix, and let a sixth part be taken every four hours.

Some give carbonate of ammonia with decoction of bark; but the acid and quinine mixture is much to be preferred.

Take of Carbonate of ammonia, 12 grains.
Decoction of cinchona, 6 ounces.

Mix, and let two tablespoonfuls be taken every four hours.

Should there be any purging, carbonate of ammonia must not be given; but compound spirits of æther may be given in decoction of cinchona instead, the dose being 20 drops.

When the patient is very restless and passes sleepless nights, the nervous system being at the same time much irritated, opiates should be given; but it requires great care and attention to discriminate the exact time to order them. Opium may be given in the form of laudanum, or Battley's sedative solution, or the hydrochlorate of morphia may be prescribed.

Take of Laudanum, 20 drops.
Pure water, 1½ ounce.

Make a draught to be taken at bedtime, and to be repeated as required.

Or, Take of Battley's sedative solution of opium, 20 drops.
Pure water, 1½ ounce.

Mix, and let it be taken at bedtime.

Morphia may be given in the form of the following draught:—

Take of Solution of hydrochlorate of morphia (Pharmacopœia), ½ drachm.
Compound tincture of lavender, 20 drops.
Pure water, 2 ounces.

Mix, and let the draught be taken at night.

Should the kidneys become congested, and albumen appear in the urine, the loins must be cupped, or blood may be abstracted by leeches. Purgatives may be given if the patient is not too prostrate; and if stupor, proceeding from the renal complication, should supervene, the hot-air bath may be resorted to with advantage.

When the lungs become involved in any inflammatory attack, relief may be given by dry cupping the chest, or by the application of leeches, blisters, or mustard poultices. When there is any pain in the abdomen, a linseed poultice lightly laid over affords great relief. Diarrhœa, if present, may be checked by astringents; but, as we shall presently see, this symptom is more characteristic of typhoid, or gastric fever, than of the present disease.

Take of Prepared chalk, in powder, 2 drachms.
Powdered gum acacia, 3 drachms.
Tincture of catechu, 2 drachms.
Water, 6 ounces.

Mix, and let two tablespoonfuls be taken every three hours; or the laudanum injection may be given.

Take of Laudanum, 20 to 30 drops.
Decoction of starch, 4 ounces.

Make an injection, and throw it up the bowels by means of an ordinary clyster pipe.

When a patient has passed over the first week of the disorder, and the more severe symptoms are setting in, and he is perfectly unconscious and devoid of feeling, the bladder frequently becomes distended with water which has accumulated, and the surgeon's aid will be necessary to pass the catheter, and draw off the urine twice or three times during the day. Bed sores must be carefully guarded against, as they are apt to make great progress before the medical attendant is aware even of their existence. As soon as the skin over any subjacent prominence becomes red and irritable, it should be bathed with brandy, or covered with soap plaister, and if possible a water bed or cushion should be procured for the suffering invalid.

TYPHOID, OR GASTRIC FEVER.

The attack of typhoid fever is generally more gradual and insidious than that of typhus. Setting in with chilliness and distinct rigors, it soon presents nearly the same train of symptoms as described under the head of the previous disease, but coming on somewhat later. Typhus fever, as already explained, arrives at its crisis at the end of the second week, and is hence called in popular parlance the "fourteen day fever." Typhoid fever runs on seven days longer, and is termed the "twenty-one day fever." Like typhus, gastric or enteric fever is marked by a peculiar eruption on various parts of the body, especially on the thorax, back, and abdomen. It comes out at the end of the second week, and consists of a few small circular elevated and well-defined rose-coloured papules, disappearing on pressure, there being several crops produced, each composed of from twenty to thirty spots. This form of continued fever may be readily distinguished from the preceding one by the above characters and those which we shall now describe. In typhoid fever, as previously stated, all the symptoms are somewhat postponed, the disease itself running a course extending over a period of time one week longer than that of typhus. The delirium accompanying the former comes on later, not appearing till the end of the second week, about the same time as the eruption comes out; it is then more active and acute than that of the latter, the patient being noisy and frequently violent, and forming a great contrast with the quiet muttering and inoffensive victim of typhus fever. In gastric fever, diarrhœa is a very constant symptom, and one very difficult of cure, depending as it does upon an ulcerated state of the bowels, the stools passed being of a liquid character, and much resembling pea-soup; in typhus fever, the rule is that the bowels are constipated. Typhoid fever is most commonly seen in young persons; but typhus may occur at any age. The former is more likely to be taken by persons who have lately come to the infected neighbourhood; but change of residence exerts no such influence upon the latter. Typhus has more of an epidemic character than gastric fever, is much more infectious, and more fatal. Age does not influence the mortality of typhoid as it does that of typhus fever, the former being more fatal to young patients, and the latter more dangerous to adults.

Causes.—Typhoid fever is due, as is the case with typhus, to the presence of some subtle poisonous material in the blood; but it still remains a very warmly-disputed point as to whether it spreads by contagion. The balance of evidence is certainly in favour of such a view; but its contagious properties are very slight, it being a very rare thing for one patient to catch the disease of another in the large wards of the metropolitan hospitals; and yet there are many cases on record which tend to establish the fact that it may be conveyed from one patient to another. In gastric fever, the discharge from the bowels contains the specific poison, so that the excrements should not be allowed to stand in the sick room; but, being previously mixed with chloride of lime, should be conveyed away at once. This distemper may be often traced to bad ventilation, or defective drainage, and in some cases to the use of impure drinking water. Thus, in 1858, there was an outbreak of typhoid fever in Westminster, following close upon the opening of a drain, and attacking those only who were residing in its immediate neighbourhood. In all cases where this disease is rife in certain districts, three things should be carefully inquired into by competent men—viz., the ventilation, drainage, and water supply.

This disease can hardly be mistaken if the symptoms are carefully considered. The rash accompanying it is very characteristic when present; but frequently it is not noticed in children. As in typhus, the temperature of the body is much raised, the thermometer placed in the armpit often rising as high as 105°, or 106°, and gradually falling after the crisis till it reaches the standard of health.

Treatment.—The treatment of this affection differs very little from that of its ally, typhus fever. The same sanitary arrangements and precautions will be necessary, and the same principles must be our guide. We must not try to stop the disorder, but rather to *conduct* it to a safe termination, treating all complications as they arise, and relieving all urgent symptoms. The diet must be nutritious and stimulating, and should include wine, brandy, beef tea, broth, milk eggs, and arrowroot. The same acid mixture may be ordered as in typhus.

Take of Sulphate of quinine, 15 grains.
Dilute nitro-muriatic acid, 40 drops.
Pure water, 8 ounces.

Mix, and let an eighth part be taken every six hours.

As just now stated, the bowels are liable to become ulcerated in this affection, and the alimentary canal is altogether much more affected in gastric than in typhus fever: this morbid process going on in the mucous lining of the intestines give rise to characteristic symptoms calling for special treating. The abdomen is painful, tender, and tympanitic; there is pain on pressure in the right groin, and sometimes the ulcers perforate the intestines, letting out their contents, and giving rise to fatal inflammation. The diarrhœa should be checked by astringents.

Take of Prepared chalk in powder, 2 drachms.
Powdered gum acacia, 2 drachms.
Tincture of catechu, 3 drachms.
Pure water, 6 ounces.

Mix, and let a sixth part be taken after every liquid stool.

Should this mixture fail, the laudanum injection may be tried.

Take of Laudanum, 20 minims.
Decoction of starch, 4 ounces.

Mix, and make an injection for the bowels.

The following pills are sometimes useful when this symptom is very obstinate:—

Take of Sulphate of copper, 6 grains.
Powdered opium, 4 grains.
Confection of roses, sufficient to make 6 pills,

one to be taken every four hours till the purging ceases.

Hot fomentations may be applied to the body, and should there be any bleeding from the bowels, one of the following astringent remedies should be advised:—

Take of Turpentine, 2 drachms.
Mucilage of acacia, 3 ounces.
Pure water, 3 ounces.

Mix, and let a sixth part be taken every four hours.

Should the kidneys be at all affected, turpentine must not be given; but the tincture of perchloride of iron must then be used.

Take of Tincture of perchloride of iron, 2 drachms.
Dilute hydrochloric acid, ½ drachm.
Infusion of quassia, 6 ounces.

Mix, and let a sixth part be taken every four hours.

Some practitioners prefer tannic acid, and others a combination of acetate of lead and opium. The former may be given thus:—

Take of Tannic acid, 1 drachm.
Dilute sulphuric acid, 1 drachm.
Distilled water, 6 ounces.

Mix, and let a sixth part be taken every three hours.

When there is much flatulent distension of the abdomen, turpentine stupes should be applied, and soothing enemata thrown into the bowels. Restlessness and nervous irritation must be treated by opiates, thus:—

Take of Battley's solution of opium, 20 drops.
Pure water, 1½ ounce.

Mix, and make a draught to be taken at bedtime, the dose to be repeated at intervals as required.

When the ulcers burrow so deeply as to perforate the bowels, and set up acute inflammation of the body, the patient rapidly sinks into a low typhoid condition, the features grow pale and ghastly, and assume a sharp appearance, cold sweats break out, the pulse is quick, weak, and irregular, the tongue dry and brown, sordes cover the teeth, there is great prostration, and the patient is troubled with nausea and vomiting. When this is the state of things, the body should be covered with a linseed poultice, and opium given freely internally.

SMALL-POX, OR VARIOLA.

Small-pox is ushered in by nausea, vomiting, loss of appetite, pain in the back and loins, rigors, hot dry skin, thirst, coated tongue, frequent pulse, and headache. In the worst cases, delirium and convulsions set in early, and a severe pain is felt in the loins. Rigors and an abundant and early appearance of the eruption portend a severe attack. After a person has been exposed to the influence of small-pox, the disease incubates from ten to twelve days: he then begins to feel poorly, and the characteristic skin affection soon shows itself, beginning in the face, and gradually extending to the trunk, arms, and lower extremities. When it first comes out, it consists of a number of little papules, slightly raised upon the surface, hard to the touch, and feeling like shots under the skin. By the third day of its existence, the papules have become developed into vesicles; and on the fifth day, the clear contents of these vesicular bodies begin to be mixed with puriform matter; and by the eighth day, all the vesicles have ripened into well-formed pustules. The vesicles consist of six or eight cells: they are somewhat depressed at their apices, and are surrounded by a rosy blush. After the end of the first week, the pustules burst and scab, and finally fall off. Small-pox is divided into two forms, according to the abundance of the eruption. When the pustules are so thickly set upon the face as to run into each other and coalesce, the disease is said to be *confluent;* when they are less numerous and remain separate, it is called *distinct* small-pox.

In *confluent small-pox*, the initiatory fever, and that attending the maturation of the pustules, or secondary fever, are much more severe than in the milder form, the patient being much prostrated and furiously delirious. The salivary glands swell, the eyelids are inflamed, and the throat is sore, so that swallowing is painful and difficult; erysipelatous inflammation sets in, abscesses form in various parts of the body, and the patient often falls a victim to the deadly grasp of this virulent form of the disorder.

Distinct small-pox is much milder in character: there may not be more than six or seven pustules formed, and in all cases the invalid soon recovers upon low diet and saline medicines.

Complications.—The severer form of small-pox proves dangerous not only by the abundance of the eruption, and the irritation set up by the abrasion of so large a surface, but it is frequently accompanied or followed by untoward complications, such as inflammation of the lungs, pleurisy, bronchitis, erysipelas, abscesses, swelling of the salivary glands, sore throat, and salivation. Death is frequently the result of the violence of the secondary fever, or of exhaustion. Small-pox requires to be distinguished from measles, chicken-pox, and typhoid or gastric fever, all of which diseases it more or less resembles. In measles, the patients are generally children, and the eruption is preceded by cold in the head, sneezing, hoarse cough, and gruff voice; but in small-pox there are no catarrhal symptoms; and the acute pain in the back and loins, with nausea and vomiting, are highly characteristic. Chicken-pox differs from small-pox in being essentially a disease of children, and in being vesicular from the first, each vesicle consisting of one cell, and having no central depression. The eruption of small-pox, on the other hand, runs through three different stages: its vesicles consist of from six to eight cells, and each has a central depression at its apex. The eruption of gastric fever may be diagnosed from that of small-pox by being soft, not raised above the surface, and disappearing on pressure; while the papular eruption of the latter disease is hard, raised into little elevations, which feel like shots to the touch.

Treatment.—As in the case of typhus and typhoid fevers, there is no cure, although the *sarracenia purpurea* has been supposed able to check its course; but the plan of treatment in all cases of small-pox resembles that previously laid down in the two forms of continued fever. The patient must be placed in a well-ventilated room, and his system supported. In days gone by it was the prevailing custom to shut up patients, suffering from this disease, from all fresh air, and to keep them warm by keeping large quantities of blankets upon them; but this plan was attacked, and eventually overthrown by Sydenham. The patient must be placed on a nutritious diet, consisting of beef tea, broth, gruel, and arrowroot. The bowels should be regulated by gentle purgatives, and saline medicine ordered

Take of Solution of acetate of ammonia, 2 drachms.
Sweet spirits of nitre, 2 drachms.
Compound tincture of lavender, 1 drachm.
Camphor water, 6 ounces.

Mix, and let two tablespoonfuls be taken every three hours.

Some medical men prefer the following mixture to act on the skin and other excretory organs:—

Take of Nitrate of potash, ½ drachm.
Bicarbonate of potash, 1 drachm.
Tincture of henbane, 1 drachm.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken every four hours.

In the more severe cases, especially if the pustules be slow to rise, or the disease assume a livid hue and malignant tendency, stimulants are necessary: wine and brandy must be freely allowed, and an ammonia mixture prescribed, thus:—

Take of Carbonate of ammonia, 12 grains.
Decoction of cinchona, 6 ounces.

Mix, and give two tablespoonfuls every four hours.

If there be much restlessness and nervous irritation, and the patient get no sleep, the timely administration of opiates will afford relief.

Take of Laudanum, 20 drops.
Camphor water, 1½ ounce.

Mix, and let the draught be taken at bedtime.

About the eleventh day the disease is reinforced by the secondary fever, slightly marked in distinct and modified small-pox, but intensely acute in the confluent form. The patient seems quite prostrate, and it is at this period of the attack that all the above-mentioned complications are liable to set in. When this condition is arrived at, the flagging system of the sufferer must be vigorously supported by stimulants and nourishing broths. Bed sores must be prevented by the use of a water-cushion or water-bed; the itching attendant upon the pustular eruption may be allayed by smearing the face over with cold cream, linseed oil, or a solution of common salt. When the eruption pierces the surface of the true skin, an indelible scar is left upon the falling off of the dry scabs; and this disfigurement is much increased when the patient scratches off the pustules before they have been matured. Therefore, he should be cautioned against thus irritating the skin. The remedies for preventing these permanent markings upon the face have been numerous; but none have met with the success that could have been wished. Thus, powdered camphor has been dusted over the face, the pustules have been rubbed over with nitrate of silver, and a solution of india rubber in chloroform has been painted over the whole face, so as to form a complete mask, and prevent the access of air. When the pustules are beginning to burst, oxide of zinc or flour should be dusted on to absorb the purulent matter which escapes.

There is no contagion so strong as that of small-pox, and none which acts at so great a distance. It may be taken from the dead body; and it is readily conveyed from one patient to another. Such being the case, various methods have been proposed to stamp out the disease, or lighten its heavy hand, and two are especially deserving of notice in this place, for we are quite sure that many have arrived at wrong conclusions concerning them, both having been attended with great success. In 1718, Lady Mary Wortley Montague introduced the practice of inoculation, and her little daughter was the first person who underwent the operation in England. Persons who have thus had the poison of small-pox introduced into the system have very slight attacks, the period of incubation is short, the pustules few in number, and the secondary fever slight. In 1796, Dr. Jenner made the great discovery of vaccination, which has quite superseded that of inoculation, the latter process being at the present time illegal. A person who has been successfully vaccinated is not entirely exempt from the disease under consideration; but in many instances is, on trial, found proof against infection, and should he fall at any time a victim to the disease, it runs its course in a very modified form, the eruption being scanty and of short duration, and the secondary fever absent. It becomes, then, the bounden duty of every conscientious parent to have her child vaccinated at the earliest period possible, provided she can procure a healthy subject from which the vaccine virus may be taken. Statistics prove very clearly that the mortality from variola has been much lessened by this brilliant discovery of Dr. Edward Jenner—thus, it has been shown that the fatality of small-pox in Copenhagen is only one-eleventh part of what it was before the introduction of vaccination.

CHICKEN-POX, OR VARICELLA.

Chicken-pox is essentially a disease of children, and is frequently mistaken by the uneducated for small-pox. It is composed of a number of little vesicles scattered over various parts of the body, sparing the face, and principally seen on the neck, back, and shoulders. Its coming out is attended with little or no fever. The eruption of this disease may be distinguished from that of small-pox by its being vesicular from the first, by its sparing the face, and exhibiting no tendency to suppuration. The vesicles of chicken-pox are surrounded by a rosy blush, each looking like a small blister; but they bear no central depression at their summit, like those of small-pox. Two or three crops are thrown out, and as they advance in age, the vesicles become opaque and broken, and scabs form, no pits being left. Varicella is contagious; but occurs once only during a person's lifetime. It is attended with no constitutional disturbance, and requires but little treatment. The bowels must be regulated by mild aperients, and the skin and kidneys called into action by the following mixture:—

Take of Solution of acetate of ammonia, 40 drops.
Sweet spirits of nitre, 1 drachm.
Syrup, 2 drachms.
Pure water, to 1½ ounce.

Mix, and let a teaspoonful be taken every three hours.

(The above mixture is intended for a child three or four years old.)

MEASLES, OR RUBEOLA.

Measles is a contagious disease usually seen in infants and children. It is so infectious that few children escape its influence for long, and as it occurs but once in a lifetime it becomes a very rare disease in adults. It is ushered in by catarrhal symptoms, there is a copious running from the eyes and nostrils, the child is constantly sneezing, and is troubled with a hoarse voice, and a gruff, harsh, ringing cough. After exposure to the specific poison of measles, the disease incubates for a period varying from ten to fourteen days, the little patient then begins to feel sickly, and to sneeze and cough, and he gradually grows feverish. After these preliminary symptoms have lasted four days, the characteristic eruption comes out, showing itself first upon the face, and gradually extending downwards to the trunk, arms, and lower extremities: it consist of a number of papules, arranged in crescentic groups, slightly elevated above the surface, and of a reddish-purple colour. After remaining out for two or three days, it fades in the same order as it originally made its appearance, the cuticle peeling off like little particles of bran. Measles itself is not generally considered a dangerous disease; but it often proves perilous by some inflammatory action being set up in the lungs, and occasionally the eruption assumes a livid colour, and putrid symptoms set in.

Treatment.—Mild cases of measles require but little treatment. Cold must be carefully avoided, the sick room sheuld be steadily maintained at a temperature of 60°, and the child well covered with warm blankets. The skin must be brought into action by diaphoretics, thus:—

Take of Solution of acetate of ammonia, 40 drops.
Sweet spirits of nitre, 20 drops.
Pure water, 1 ounce and 2 drachms.
Syrup, 2 drachms.

Mix, and let the child take one teaspoonful every four hours.

(The above mixture is intended for a child three or four years old, and must be varied in strength according to the age of the patient.)

The bowels must be regulated by mild aperients, and thirst allayed by toast and water or lemonade. Blisters should be applied with great care to children, as they are apt to produce deep sloughs and a great deal of irritation in the system of so young patients. Lung complications must be treated by the appropriate remedies; and if malignant symptoms set in, or the rash refuse to come out, wine and other stimulants must be freely allowed, with a nutritious diet, consisting of beef tea and mutton broth.

SCARLET FEVER, OR SCARLATINA.

The principal feature of this eruptive disease is the violence with which it frequently attacks the throat; in fact, this is generally the most troublesome symptom, and causes the most distress to the invalid. After the poison of scarlatina has found access to the blood, it lies dormant from five to seven days, the patient then grows feverish, his face is flushed, and he complains of headache and debility, and is incapable of any exertion. The tongue is furred, there is nausea and vomiting, a frequent pulse, and great heat and dryness of skin, the temperature rapidly rising from 98° to 103°, or even 105°. This disease is divided into three forms: one called simple scarlatina, in which the throat remains unaffected; another in which both the skin and throat are involved, technically called *scarlatina anginosa;* and a malignant form in which the throat is severely implicated. In rare cases, scarlet fever occurs in what is called the *latent* form, the throat being sore, and swallowing difficult; but there is no eruption. Last winter the author was attacked by this form of the disease, and had it not been for the thermometer, in all probability it would have been mistaken for simple cold and fever; but this delicate little instrument on being placed in the armpit quickly rose from the normal temperature of the body (98°) to 103°, and this at once settled the point, and called for a month's warm residence in the house, so as to avoid chilling the skin and setting up inflammatory action in the substance of the kidneys, so frequently attendant upon mild cases of this disorder.

The eruption of scarlet fever appears on the second day of the disease. Beginning in the face, it gradually extends to the neck, chest, trunk, and extremities. It consists of numerous red points of a bright scarlet colour, distributed in irregular patches, and terminating in desquamation of the cuticle, large masses of the outer skin peeling off at once—thus, many specimens have been preserved of the skin of the whole hand or foot, which has come away just like a glove. The tongue is coated with a white fur, and the enlarged papillæ rising through give it the appearance of strawberries, and it has hence been called the "strawberry tongue of scarlet fever." The tonsils and soft palate become red, swollen, painful, and tender, and deglutition much impaired. In the severer forms, delirium is very apt to come on.

Malignant scarlet fever is attended with low typhoid symptoms, delirium is troublesome, the tongue is dry and brown, sordes cover the lips and teeth, the breath is fœtid, the throat symptoms grow very severe, and sometimes gangrenous inflammation seizes upon these parts, the glands of the neck swell, and occasionally suppurate, and there is great prostration, the eruption being livid and often mixed with livid spots, called *petechiæ.* These symptoms gradually increase, the patient grows weaker and weaker, and death soon closes the scene, frequently occurring on the third or fourth day of the disorder.

Complications.—Not only is scarlatina a severe and dangerous disease in itself, but it is very apt to be reinforced by secondary affections, the most usual being congestion of the kidneys, followed by albuminous and bloody urine, and general dropsy. This state of things may either pass away under judicious treatment, or may lay the foundation of chronic renal disease. In some cases the inflammatory affection of the throat extends to the ear, and causes disease of the bony cavity in which this organ of sense is situated; and in rare instances gives rise to inflammation of the veins, and the membranes investing the brain. Various forms of inflammation of the eyes and glandular enlargement frequently follow close upon its course.

Treatment.—The simple form of scarlatina, in which the throat is not involved, requires but little treating. The patient must be kept warm, his bowels regulated, and he should be placed on spare diet. When the throat becomes affected, chlorate of potash is the most useful remedy we have, and may be thus given:—

Take of Chlorate of potash, ½ drachm.
Dilute hydrochloric acid, 1 drachm.
Compound tincture of lavender, 2 drachms.
Pure water, 6 ounces.

Mix, and let a sixth part be taken every four hours.

A linseed poultice should be applied round the throat externally. Should there be much delirium, the hair must be cut short, and cold lotions applied to the heated head. If there be much debility present, some stimulating mixture should be prescribed.

Take of Compound spirits of ammonia, 1 drachm.
Spirits of chloroform, ½ drachm.
Pure water, 6 ounces.

Mix, and let two tablespoonfuls be taken every four hours.

In the malignant form of the disease, we must rely entirely upon stimulants and nutritious food, wine, brandy, broth, and beef-tea, being very liberally supplied. Belladonna has been much praised by homœopaths for its protecting influence against this contagious affection; but on trial has proved itself utterly useless. When acute inflammation of the kidney and renal dropsy set in, they must be treated by the appropriate remedies as described under the head of those affections. It is a most important part of the treatment of scarlet fever to guard against the action of cold; for if the excretory action of the skin be suppressed for a short time only, the kidneys are sure to become involved. No patient should be allowed to venture out while the skin is still desquamating, for then is the most dangerous period. Renal dropsy most frequently occurs in mild cases; for the patients not feeling ill go out too soon, and thus frequently lay the foundation for chronic mischief in the kidneys. Scarlet fever is liable to be confounded with measles, but may be readily distinguished by attending to the following characteristic points:—In the former disease, the eruption comes out on the second day of the febrile disturbance, is of a scarlet colour, and irregularly distributed; while in the latter it does not make its appearance till the fourth day, and is then of a darker colour, more raised above the surface, and regularly distributed in horse-shoe shaped patches. Scarlatina is not preceded by the catarrhal symptoms which usher in an attack of measles, and in the latter disease the throat does not become affected.

MUMPS, OR PAROTITIS.

Mumps consists essentially of inflammation of the salivary glands, especially the parotid. It is contagious, and frequently extends among children. It is accompanied by febrile symptoms: the tongue is coated, the skin hot and dry, and the pulse quick; the parotid gland becomes much enlarged, the swelling extending from the ear to the chin, and the part affected is tender and painful. In about four days the disease begins to decline, the swelling decreases in size, the febrile disturbance grows less, and the patient is soon restored to health. Sometimes, instead of thus leaving the system, the disease flies from the salivary glands to the breasts.

Treatment.—Hot fomentations should be applied to the swollen glands, the bowels must be regulated by mild aperients, and saline diaphoretics given internally.

Take of Nitrate of potash, 1 scruple.
Bicarbonate of potash, 40 grains.
Sweet spirits of nitre, 40 minims.
Syrup, 1 drachm.
Pure water, 1 ounce 3 drachms.

Mix, and let a teaspoonful be taken every four hours.

(This mixture is intended for a child two or three years old, and must be varied in strength according to the age of the patient.)

BLEEDING FROM THE NOSE, OR EPISTAXIS.

Blood is poured out from the vessels of the nose under two different conditions: in youth, it is primary or idiopathic, and of an active nature, the blood being of a bright arterial hue; in an old person epistaxis is secondary or symptomatic, and of a passive character, the blood which is poured out being essentially venous. In some cases, bleeding from the nose is vicarious; it takes the place of some habitual hæmorrhage—thus, in women it may take the place of the catamenial discharge; and in men, of the habitual loss from piles, or hæmorrhoids.

Treatment.—This affection occurring in young patients must be checked. Cold water should be sprinkled upon the forehead and the bridge of the nose; a solution of nitrate of potash may be snuffed up the nostrils, or powdered matico leaf may be used. In obstinate cases gallic acid may be given internally, thus:—

Take of Gallic acid, 1 drachm.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and let a tablespoonful be taken every four hours.

(For a patient nine or ten years of age.)

Bleeding from the nose in older patients must be looked upon with suspicion, and we must be careful how we check it. Before using any means to arrest the flow of blood, the bowels should be briskly acted upon by an active purgative; but when the bleeding is profuse the nostrils should be plugged with lint dipped in a solution of alum, or the tincture of perchloride of iron.

THRUSH, OR APHTHÆ.

Thrush is met with in two classes of patients, in infants and adults. It is seldom serious in young children at the breast; but it rarely happens in adults who have not been pulled down by some debilitating disease, and is then of serious import. This disease consists of numerous little irregular round specks scattered over the mucous membrane of the lips, tongue, cheeks, tonsils, uvula, and soft palate, looking like drops of tallow, and formed thus:—A quantity of gelatinous fluid collects between the true skin and the epidermis, and the latter breaking and falling off, leaves a raw spot. Aphthæ are frequently attended with disarrangements of the stomach and diarrhœa. Most mothers and nurses suppose that this disease not only affects the mouth of their little ones, but that it goes through the whole alimentary canal. This is not the case, for it never extends beyond the mouth. The best application to children is honey and borax, and antacids may be given with advantage, for there is generally some acidity of the stomach present.

Take of Carbonate of magnesia, 10 grains.
Powdered rhubarb, 8 grains.
Peppermint water, 1 ounce.

Mix, and let a teaspoonful be taken three times a day.

(The above mixture is intended for a child two years old, and must be varied in strength according to the age of the patient.)

When this affection occurs to adults labouring from some other disease, there is usually much prostration, and it is looked upon as an unfavourable symptom. Bark, wine, brandy, and nourishing food must be freely allowed, and the mouth washed out with the following gargle:—

Take of Chlorate of potash, 2 drachms.
Dilute hydrochloric acid, 1 drachm.
Pure water, 8 ounces.

Mix, and let a gargle be made, to be used frequently.

BRONCHOCELE, OR GÔITRE.

This disease consists of enlargement or hypertrophy of the thyroid gland, which is placed in front of the windpipe. It is much more common in chalky districts, and is very frequently seen in Switzerland. From its being a common affection in Derbyshire, it has been called the Derbyshire neck. The lobes of the gland are more distinctly marked, and rise with the larynx and pharynx in the act of deglutition. This enlargement may depend upon various morbid conditions—thus, it may be due to inflammation, and to cancerous or cartilaginous deposits; sometimes it is the result of tubercular infiltration, or of simple hypertrophy, having no malignant tendency; and in rare cases, it is due to ossific deposits. Bronchocele, besides being unsightly, generally affects the processes of respiration and deglutition, and in some cases impedes the circulation of the blood. It is much more common in women than men, and frequently some disorder of the uterine functions is present at the same time; in some cases the disease is hereditary, and in very rare instances children have been born goïtrous. This affection was for a long time supposed to be due to some abnormal condition of the atmosphere; but has since been proved to arise from drinking water contaminated with chalk.

Treatment.—The patient should be removed from the chalky district, and iodide of potassium freely given.

Take of Iodide of potassium, ½ drachm.
Bicarbonate of potash, 20 grains.
Decoction of cinchona, 6 ounces.

Mix, and let a sixth part be taken three times a day.

While the patient is taking this medicine internally, she should paint the enlargement over with compound tincture of iodine, or rub into it a small piece of the compound iodine ointment every night and morning. When the health is much impaired, cod-liver oil and iodide of iron may be given together, thus:—

Take of Cod-liver oil, 1 ounce.
Syrup of the iodide of iron, 2 drachms.

Mix, and let two teaspoonfuls be taken three times a day.

Several surgical operations have been proposed to relieve this troublesome affection; but none of them has met with sufficient success to warrant its repetition. Thus, a seton has been passed through the enlarged gland, the arteries nourishing its substance have been tied, and the whole gland has been extirpated.

SCURVY.

The symptoms of this disease are essentially those of debility: there is great lassitude and mental anxiety, the countenance is sallow, and the breathing difficult; the gums are soft, spongy, tender, and apt to bleed by the slightest touch; the teeth are loose, and the breath fetid. Hæmorrhages take place from the stomach, intestines.

and other organs of the body, purple spots appear on the trunk and extremities, and there is much prostration, and the patients frequently die of exhaustion. This disease is due to the want of fresh vegetables, and is frequently seen in sailors who have just returned from a long sea-voyage. It is most common in winter.

Treatment.—Oranges and lemon juice should be freely given, and an extra quantity of potatoes allowed in the diet; any salt of potash will do good, and the citrate is especially useful.

Take of Bicarbonate of potash, 2 drachms.
Pure water, 6 ounces.

And, Take of Citrate acid in powder, 1½ drachm.

Divide into six powders, dissolve one in a tablespoonful of cold water, add this to a sixth part of the mixture, and drink a dose thus prepared, while effervescing, every four hours.

The hæmorrhages may be arrested by the use of turpentine, or the tincture of perchloride of iron.

BOIL, PUSH, OR FURUNCULUS.

In persons who are out of health, boils, or, as they are sometimes called, pushes, are apt to appear in all parts of the body. They run the following course:—In the first instance, a circular patch of inflammation makes its appearance, this becomes gradually round and hard, and in due time more pointed and of the colour of tallow at its summit. It grows softer, and at length bursts, leaving a rugged open sore. This pustular affection of the skin frequently depends upon some morbid condition of the blood; and as one crop of pustules takes its departure, so another makes its appearance.

Treatment.—A warm linseed poultice must be applied to the boils, and the following mixture given internally:—

Take of Solution of potash, 2 drachms.
Decoction of cinchona, 6 ounces.

Mix, and let two tablespoonfuls be taken three times a day.

In some cases, small doses of arsenic have cured this troublesome affection, after it had resisted all other plans of treatment.

Take of Fowler's solution, 12 drops.
Infusion of quassia, 6 ounces.

Mix, and let a sixth part be taken three times a day.

If the system be low, and the appetite bad, acid and tonic medicine should be given, and wine and beer allowed; if necessary, the patient should be advised to give up for a time his business avocations, and get change of air and scene.

Take of Dilute nitro-muriatic acid, 40 drops.
Infusion of gentian, 8 ounces.

Mix, and let an eighth part be taken three times a day.

In other cases, steel, quinine, and cod-liver oil have effected a cure.

CARBUNCLE, OR ANTHRAX.

A carbuncle consists of a large, circular, flattened tumour, of a purplish-blue colour, of firm consistence, hard to the touch, and made up of two or more boils. As it proceeds a number of small openings may be noticed, and underneath a large core, and when this is discharged, a large sloughing surface is left. It is a disease of adult life, attacking the corpulent, and those who have lived freely. These compound boils are very frequently situated upon the back of the neck, and sometimes upon the scalp, where they prove dangerous to life.

Treatment.—The surgeon should be consulted, and in all probability he will have to make one or two deep incisions into the softening mass. The pain may be relieved and the patient composed by opiates given at night.

Take of Powdered opium, 5 grains.
Confection of roses, sufficient to make 6 pills,

one of which may be given at bedtime as required.

The bowels will require regulating by purgatives, and the patient must be freely supplied with wine, brandy, beef-tea, and all kinds of nutritious food. The following mixture will increase the appetite and strengthen the flagging system :—

Take of Dilute nitric acid, 1½ drachm.
Decoction of cinchona, 8 ounces.
Sulphate of quinine, 10 grains.

Mix, and let an eighth part be taken three times a day.

ABSCESS.

An abscess consists of a collection of puriform matter circumscribed by the effusion of fibrin. It is preceded by all the symptoms of inflammation : there are redness, heat, and swelling, and the patient is feverish from the constant pain and irritation in the affected part. As the matter approaches the surface, the enlargement becomes softer and more prominent, and eventually the cuticle gives way, and the matter is set free.

Treatment.—When any part becomes inflamed, the first thing we have to do is to check it, and prevent its running on to suppuration, and so we must in the first instance apply leeches and cold lotions; but when an abscess must inevitably be formed, we must cover the inflamed surface with warm linseed poultices and hot flannels; if necessary, the surgeon must be consulted to puncture the abscess, and let out its contents. If it be due to the presence of foreign matters, they must be removed and warm poultices applied. In cases of large abscesses, the powers of the patient will need support, and stimulants and a liberal diet must be allowed.

ERYSIPELAS.

This affection of the skin has received various names—thus, it is sometimes called the *rose*, and sometimes *St. Anthony's fire*. It consists of diffuse inflammation of the skin, which often penetrates to the loose tissue beneath, terminating in the formation of large diffused abscesses, and being then technically called *phlegmonous erysipelas*. It is attended with pain, heat, redness, and swelling of the part affected, and the cuticle is in some cases raised into little vesicles. In idiopathic erysipelas, the face and head are the parts generally affected; but it may follow wounds in any part of the body. Besides the above local symptoms, the system at large seems much affected, and remote symptoms are manifested resembling those of other cases of blood poisoning: the skin is hot and dry, the tongue furred, the pulse hard and frequent; there is headache, nausea, vomiting, and delirium, and the patient is quite prostrate. It is preceded by chilliness and rigors, circumscribed redness and swelling then appear on some part of the body, frequently on the nose or one of the ears, and quickly extends to the head and face. In *traumatic* erysipelas, or that form following a wound, a rosy blush first makes its appearance round its edges, and then very rapidly spreads, the patient being quite prostrated, and evincing all the above-described symptoms.

Erysipelatous inflammation may prove fatal by extension to the membranes of the brain, or by implicating the organs of voice, and impeding the process of respiration; in some cases the patient gradually sinks of exhaustion.

Treatment.—The bowels will require regulating by some mild aperient, and the strength of the patient must be vigorously supported till the virulence of the disease has passed away. He should be placed on a very liberal diet, and freely stimulated with wine and brandy, and some tonic mixture should be ordered.

Take of Tincture of perchloride of iron, 1 drachm.
Infusion of quassia, 6 ounces.
Dilute hydrochloric acid, ½ drachm.

Mix, and let a sixth part be taken three times a day.

Some medical practitioners prefer carbonate of ammonia to the above form of steel, thus:—

Take of Carbonate of ammonia, 24 grains.
Decoction of cinchona, 8 ounces.

Mix, and let two tablespoonfuls be taken every six hours.

Hot fomentations must be applied to the erysipelatous surface, or flour may be dusted on. Some apply a mixture of collodion and castor-oil, and the author has found this very useful in practice. Mr. Higginbottom uses the nitrate of silver in such cases, applying either the solid stick, or a saturated solution, made by dissolving one scruple of the salt in a drachm of distilled water. In the phlegmonous form of the disease, where the tissues are infiltrated with purulent matter, free incisions must be made to give it free vent.

NETTLE RASH, OR URTICARIA.

Nettle rash consists of little solid elevations of the skin in various parts of the body, irregular in form, of a whitish colour towards the centre, and of a reddish hue towards the circumference; they resemble in outward appearance ordinary wheals. It is attended with itching and burning of the skin, and symptoms of gastric disturbance are frequently present, such as nausea, vomiting, and loss of appetite. This affection of the skin is not contagious; it occurs in two forms, the acute and chronic, the latter being of an intermittent character, and appearing upon any little disarrangement of the stomach. It is often brought on by raw vegetables and shell-fish, as cucumbers, mushrooms, crabs, lobsters, and mussels.

Treatment.—In acute cases, emetics and purgatives should be given. Vomiting must be excited by a tablespoonful of mustard mixed with a tumblerful of warm water, and the bowels may be briskly acted upon by the following powder:—

Take of Powdered jalap, 20 grains
Calomel, 10 grains.

Mix thoroughly, and let the powder be taken in a little preserve.

In the chronic form the digestive organs must be brought into a healthy state by the use of antacids and mild aperients.

Take of Carbonate of magnesia, 1 drachm.
Powdered rhubarb, 1 drachm.
Compound spirits of ammonia, 1½ drachm.
Distilled water, 6 ounces.

Mix, and let two tablespoonfuls be taken three times a day.

Local applications do not seem in any way to alleviate this affection; but cold lotions may be tried, or flour may be dusted over the affected part.

ITCH, OR SCABIES.

Itch belongs to the vesicular class of skin diseases. It is most frequently seen among the lower classes of society, and being very contagious, soon affects all the members of a family. Its usual habitat is between the fingers, or the flexures of the various joints of the body. It first consists of pimples; but these are soon converted into minute vesicles, and these on being scratched run into distinct pustules. This disease is essentially due to the presence of a small parasite, visible only by the powers of a good microscope: it is called *acarus scabiei*, and is to be found in small tunnels or furrows leading from the vesicles. Actual contact is necessary for its propagation.

Treatment.—The most effectual remedy for this loathsome disease is sulphur: it must be applied in the form of an ointment, made by rubbing down sulphur with hog's lard, and should be smeared over the parts affected every night and morning, the patient lying in bed, and wearing the same linen, till a cure is effected, and all the infected clothes should then be burnt. Sulphur may be applied in the form of a lotion by means of the solution of sulphide of calcium, and this is a much more cleanly remedy than the ointment, and acts very satisfactorily.

Take of Solution of sulphide of calcium, 1 ounce.
Water, 6 ounces.

Make a lotion, and let it be rubbed into the parts affected morning and evening.

The author has used the following lotion with advantage:—

Take of Liver of sulphur, 1 drachm.
Water, ½ pint.

Make a lotion, and let it be applied twice a day to the affected parts.

RINGWORM.

This disease is most commonly situated upon the scalp, face, and neck; occurring in irregular patches. It begins with clusters of small yellow pustules, which break, and form scabs. The patches gradually increase in size, and grow together, and, if neglected, the disease soon spreads all over the scalp. The hair becomes brittle, dies, and falls off. It is a disease of childhood, and spreads by contagion.

Treatment.—The hair must be cut short, and the head well washed with soap and water, and a poultice should be applied at night. After the head has been cleansed by one of the above means, the following ointment may be used:—

Take of Ointment of nitrate of mercury, 2 drachms.
Lard, 2 drachms.

Rub them thoroughly together, and dress the head twice a day.

Or the eruption, after being cleaned and softened by a warm poultice, may be dressed with the white precipitate ointment.

Take of White precipitate, 1 drachm.
Lard, 1 ounce.

Mix them thoroughly, and dress the head morning and evening.

This affection of the skin frequently occurs in children who are sickly and out of health. Cod-liver oil should then be given, and it may be advantageously mixed with the syrup of iodide of iron, thus:—

Take of Cod-liver oil, 1 ounce.
Syrup of the iodide of iron, 2 drachms.

Mix, and let a teaspoonful be taken twice a day.

(The above is intended for a child three or four years old; and the dose must be varied according to the age of the patient under treatment.)

SHINGLES, OR HERPES ZOSTER.

This affection consists of a number of little vesicles, encircling usually only one half of the body: beginning over the spine behind, and ending in the median line in front. It is much more frequently seen on the right than on the left side of the body, and in rare instances it extends to the lower extremities. It is attended with heat of skin, and itching; but by far the most troublesome symptom is an intensely acute, deep-seated pain in the chest. The exciting cause of this affection remains buried in obscurity. Some observers have supposed that it is due to some faulty action in the nervous system; and certainly the pain in the chest is of a nervous character. It occurs in the young and delicate, and more often in males than females; generally lasting from ten days to a fortnight.

Treatment.—The bowels must be regulated by mild aperients, and the digestive organs brought into a healthy condition. The pain may be relieved by opiates and the warm bath; and the following mixture is useful to soothe the stomach and neutralise acidity:—

Take of Carbonate of soda, 1 drachm.
Compound spirits of ammonia, 2 drachms.
Spirits of chloroform, ½ drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken twice a day.

ULCERS.

There are five different kinds of ulcers, which will be described in this place, viz., the healthy, irritable, indolent, varicose, and sloughing ulcer.

(α) The *healthy ulcer* is made up of a number of small florid pointed granulations; its edges are smooth, and a little healthy puriform matter is secreted.

Treatment.—This ulcer may be soon healed by the application of dry lint, or of lint dipped in cold water. Should the granulations be too abundant, and raised above the surface, it must be smeared over with nitrate of silver.

(β) The *inflamed* or *irritable ulcer* is hot and tender; the surface is red, and easily bleeds, and the discharge is thin and profuse. It follows the most trifling accidents, and often depends upon some disease of the veins, or upon irritation caused by diet, and usually occurs in poorer patients.

Treatment.—The whole ulcer must be enveloped in a soft, warm linseed poultice, and freely bathed in warm water; and a lotion containing extract of poppies will give great relief.

Take of Extract of poppies, 2 drachms.
Boiling water, ½ pint.

Mix, and keep the part affected constantly wet with it.

Should cold applications be more agreeable to the feelings of the patient, the ordinary lead lotion may be applied.

Take of Goulard's extract, 1½ drachm.
Distilled water, ½ pint.

Mix, and let the ulcer be kept wet with rags dipped in it.

The health of the patient must be duly attended to, the bowels being regulated by purgatives, and the stomach treated by antacids.

(γ) The *indolent ulcer* is known by its smooth and glassy surface, its thick, raised, and purplish-white edges, and its scanty discharge.

Treatment.—The health of the patient must be improved by liberal diet and tonics; mixtures containing acid and bark are especially useful.

Take of Sulphate of quinine, 12 grains.
Dilute nitric acid, 1 drachm.
Compound tincture of lavender, 1 drachm.
Pure water, 6 ounces.

Mix, and let two tablespoonfuls be taken three times a day.

The surface of the ulcer may be dressed with one of the following *stimulating* lotions:—

Take of Sulphate of zinc, ½ drachm.
Water, ½ pint.

Make a lotion, and let linen rags wet with it be constantly applied.

Some surgeons prefer sulphate of copper as a local application in such cases; and we have seen it used in many cases lately with very satisfactory results.

Take of Sulphate of copper, 12 grains.
Water, 6 ounces.

Let a lotion be made, and the ulcer kept constantly wet with it.

After the pieces of linen rag or lint have been moistened with either of the above lotions, and applied to the ulcerating surface, they should be covered with oil silk, to prevent evaporation and keep the application damp; and the limb should be tightly bandaged with an ordinary roller.

(δ) The *varicose ulcer* is due to the obstruction of the circulation by disease in the veins; these vessels being dilated, contorted, and thickened. It is of an oval shape, indolent, and attended with aching pain. The local application for the ulcer itself must be chosen according to the actual condition of the sore; and the whole limb should be gently supported by an ordinary leg bandage, or the weakened veins may be sustained by the constant use of an elastic stocking.

(ε) The *sloughing ulcer* is formed by an unhealthy action set up in one of the other kinds of ulcers, and is frequently met with in the case of old standing indolent sores; this form of ulcer is sometimes seen on the legs of dropsical patients, the skin having given way under the pressure of the fluid beneath.

Treatment.—The anæmia and debility which are always present in such cases must be treated by iron.

Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 15 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

The bowels must be regulated by mild aperients, and the patient should be advised to take a warm bath occasionally. The ulcer must be treated by soothing applications, such as warm poultices and hot fomentations.

BURNS AND SCALDS.

The effect of burns and scalds being much the same, and the treatment of both being alike, we shall consider them together. In the mildest cases they cause superficial redness only, but when more severe the cuticle is raised into large vesications, and in very bad cases the injured parts at once die. The irritation set up by severe burns, and the abrasion of so large a surface of the body, gives rise to well-marked constitutional symptoms, differing but little from those of collapse; the surface of the body is pale and chilled, cold sweats break out, and the pulse is quick, feeble, and irregular. In fatal cases there is delirium and great exhaustion, and, in a small proportion of cases, effusion into the brain takes place.

Burns and scalds affecting any large surface of the body are always attended with danger to life; and those on the trunk are more perilous than those affecting the limbs.

Treatment.—The great principle to be attended to in the treatment of burns and scalds is to exclude the presence of air. The patient must be well supported, and the pain relieved and his nervous system calmed by the free use of opiates. The local application in most general use is carron oil, which is a liniment made by shaking together equal parts of lime-water and linseed oil. The affected parts must be smeared with this soothing mixture, and then wrapped up in cotton wool. In the course of a few days, the wounds, if extensive, will begin to slough, and then a warm linseed poultice should be applied, and in the later stages, when the wounds are healing, zinc ointment is the best application.

Take of Oxide of zinc, 1½ drachm.
Lard, 1 ounce.

Some surgeons apply turpentine in the first instance; others have recourse to a mixture of collodion and castor-oil, which is certainly a very effectual mixture, wholly preventing the access of air, and relieving at once all the severe suffering which patients experience for the first two or three days after the accident. A few months ago the writer was called up to a man who had been severely scalded by the escape of a large quantity of steam and boiling water from the mud-hole of a boiler standing hard by. Upon his first seeing him he was literally raving with pain; his face being bathed in perspiration, and his features expressive of the most intense anxiety. But upon the application of collodion and castor-oil the pain was at once relieved, the man was laid upon a bed, and made no further complaints of suffering; and if the scalded parts showed symptoms of any irritation, another coating was painted on with a camel's hair pencil. The collodion and oil liniment is much more cleanly than carron oil, and may be made thus,—

Take of Collodion, 4 ounces.
Castor-oil, 2 ounces.

Shake them together, and let the mixture be painted on as required, Before using any of the above local applications, the vesicles must be clipped, and the serous fluid let out.

The system of the patient must be well supported on beef-tea and *brandy*, pain must be treated by opium, and the bowels regulated by castor-oil; the following composing draught may be taken by an adult at bedtime:—

Take of Battley's solution of opium, 20 drops.
Camphor water, 1 ounce.

To be taken at bedtime when required.

WOUNDS.

Wounds are divided into four kinds, the incised, punctured, lacerated, and contused.

An *incised* wound is generally caused by some sharp cutting instrument, as a knife or razor, and is easily brought together; when it heals at once without any suppuration, it is said to heal "by the first intention;" but when such a wound fills up from below, it does so by throwing out granulations. An incised wound should be well washed in warm water, and its edges brought together by sutures, or adhesive plaister. Sutures should not be put into scalp wounds, for fear of diffuse inflammation and suppuration.

Punctured wounds are the result of some sharp stabbing instrument, and are more dangerous than the previous kind, for the deep seated vessels and nerves may be injured, or deep suppuration may set in, leading to the formation of a long sinus, and locked jaw is apt to follow this kind of injury. All foreign bodies should be removed, and the bleeding checked; the wound should be well washed in warm water, and its edges brought into apposition by a bandage firmly applied to the part. Should an abscess be formed, it must be treated as described under the head of that affection.

Lacerated wounds are frequently the result of great violence, and are more difficult of cure, always healing by granulation. They must be well cleaned, and all foreign bodies removed. The injured surfaces should be dressed with strips of lint dipped in cold water, and the parts may be brought together by strapping, and light bandaging. If necessary, the patient may be placed on low diet, but if the wound be extensive, he is generally weak, and needs support. Locked jaw is most common after punctured and lacerated wounds, and hence these kinds of injury are attended oftentimes with great danger. Arteries when *torn* across immediately contract, and consequently hæmorrhage is rarely troublesome in this class of wounds.

Contused wounds are generally attended with abrasion of large surfaces; they heal by granulation, but are apt to slough. The granulating process must be encouraged by warm poultices, and stimulating lotions.

CHILBLAINS.

Chilblains consist of a low form of inflammation of the skin, occurring in delicate persons, and those of a sluggish circulation. The principal exciting cause is the sudden alteration of temperature, and many cases may be traced to washing the hands in cold water and then drying them before the fire. The skin may be merely red or purple, or there may be vesications present, the worst cases being attended with the formation of large sloughs and ulcers.

Treatment.—When the skin is just beginning to turn red or purple, the surface should be painted with tincture of iodine, or rubbed with the following stimulating liniment:—

Take of Opodeldoc, 1½ ounce.
Turpentine, 2 drachms.
Spirits of camphor, 2 drachms.

Shake thoroughly, and let the liniment be rubbed in twice a day.

The vesications must not be broken, and if sloughs be present they must be treated by poultices, and stimulating lotions, and ointments.

Take of Sulphate of zinc, 20 grains.
Pure water, 6 ounces.

Mix, let a lotion be made, and the parts kept constantly wet with it.

GUMBOIL, OR ALVEOLAR ABSCESS.

Gumboils consist of small abscesses formed about the roots of decayed teeth, which give rise to inflammation of the gums, and the subsequent formation of puriform matter. In some cases portions of the jaw-bone die and are thrown off. This affection is a very painful one, the invalid being feverish, and unable to eat.

Treatment.—The pain must be relieved by warm fomentations, and bread soaked in warm milk should be sucked down, to keep up the nutrition of the body, and to act at the same time as a soothing local application. When a number of these little abscesses are formed in succession, the diseased tooth should be extracted, and in all cases as soon as matter can be felt, an incision should be made into the inflamed surface to allow of its escape.

STYE, OR HORDEOLUM.

A stye is a small painful boil situated on the margin of one or other of the eyelids: they are apt to occur in successive crops, generally depending upon a low state of the system, the patient being at the same time feverish and weak.

Treatment.—The eye should be well bathed in warm water, and a linseed poultice applied; when forward enough the little boil should be punctured, and at night, after the contained matter has escaped, the lid should be smeared over with citrine ointment to remove any remaining hardness. The bowels must be regulated by mild aperients, and the patient requires change of air and scene, and a full and liberal diet; the following strengthening mixture will be of service, increasing the appetite and giving tone to the system:—

Take of Sulphate of quinine, 12 grains.
Sulphate of iron, 10 grains.
Dilute sulphuric acid, 1 drachm.
Distilled water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

IN-GROWING TOE-NAIL, OR ONYCHIA.

This affection of the toes is due to the formation of an ulcerating surface in the fleshy part about the nails; there are numerous tender and irritable granulations thrown out, and by the pressure of the shoe these tender parts are driven against the nail, so that the sufferer is lame, and hardly able to walk.

Treatment.—The patient should be confined to the house, and ordered to keep his leg quiet; poultices and warm fomentations must be applied to relieve pain, and the ulcerating surface should be smeared over with caustic. In most cases this affection is not thus easily relieved, but it becomes necessary to remove a portion of the nail, which being a very painful operation, generally requires the previous administration of chloroform, and the surgeon's aid is very necessary.

WHITLOW, OR PARONYCHIA.

By the term "whitlow" is meant an abscess of the fingers, which may be either superficial, or deep amongst the tendons of the several phalanges: the superficial form requires no treatment beyond the application of poultices, and hot fomentations. The deep burrowing whitlow should be resolutely opened by the knife of the surgeon, for if not, the bone of the fingers may become diseased, or their various movements much interfered with. Zinc ointment may be subsequently applied to the healing surfaces, and the system should be vigorously supported by wine, brandy, and nutritious food, and a mixture containing acid and bark will be of great service, thus:—

Take of Sulphate of quinine, 15 grains.
Dilute sulphuric acid, 1 drachm.
Tincture of orange peel, ½ ounce.
Pure water, 8 ounces.

Mix, and let an eighth part be taken three times a day.

POLYPUS.

A polypus is any kind of tumour possessing a pedicle: they are generally attached to mucous membranes, and most frequently situated in the nose, ear, womb, and lower bowel.

(*a*) *Polypus of the nose* is a small tumour with a slim pedicle, pear-shaped, and of the colour and consistence of jelly. It is attended with the following symptoms: the patient complains of a feeling of *stuffing* in the nose, and other symptoms of cold in the head, and as the foreign body increases in size his voice grows thick, and he is unable to breathe through the affected nostril. After being removed they generally return, and if allowed to grow soon displace the walls of the nasal cavity.

Treatment.—As soon as the little tumour causes any inconvenience to the patient from its size and rapid growth, it should be removed, and this may be done by a pair of forceps, or by an instrument called the *écraseur*, which acts by ensnaring the pedicle of the polypus in a loop of strong wire, which on being tightly drawn, cuts off the irritating substance.

(*β*) *Polypus of the ear* consists of a little growth about the size of a pea or bean; it must be removed by the forceps or snare, and the surfaces afterwards touched with nitrate of silver.

(*γ*) *Polypi of the womb and bowels* must be removed by the écraseur, and the most useful instrument is the wire écraseur of Dr. Braxton Hicks, of Guy's Hospital.

RICKETS, OR RACHITIS.

The bony parts of the body are made up of a mixture of animal and earthy matter, the former giving to them their toughness and elasticity, and the latter their density and firmness. A long bone, when deprived of its inorganic constituents by soaking it in dilute hydrochloric acid, is so flexible that it may be tied into a knot, and after it has lost all its animal matter by a process of burning, it is so brittle as to fall to pieces by the slightest touch. Now it has been found that healthy bone contains animal and earthy matters in certain proportions, varying according to the age of the individual, the animal matter decreasing and the earthy ingredients increasing as age advances; thus, in the child, the inorganic constituents form nearly one-half the weight of the bones, in the adult four-fifths, and in the aged seven-eighths; and from these facts we see why the bones of old persons are so easily fractured, while the bones of children may be bent almost double without being broken.

Rickets is essentially a disease of childhood, and is due to too low a proportion of earthy matter, the bones themselves being soft, pliant, and flexible; thus, Dr. Davey found in a rickety bone of a child, in 100 parts, 74 parts animal matter and 26 earthy, the normal relation being, in 100 parts, 47·20 animal matter and 48·48 earthy matter. The bones being thus abnormally flexible, curve under the superincumbent weight of the body, the natural curves of the bones being augmented. It is often met with in strumous children, and is much fostered by dirt, bad living, and want of fresh air and light. In very severe cases the figure and general appearance of the child become altered, the stature is stunted, the face triangular, the pelvis misshapen, the spine much curved, and the little sufferer is "pigeon-breasted."

Treatment.—The child should be allowed plenty of fresh air and light, his diet must be nutritious and include animal food, and cod-liver oil and iron should be freely given.

Take of Cod-liver oil, 1 ounce.
Syrup of the iodide of iron, two drachms.

Mix, and let one teaspoonful be taken three times a day.

(For a child two or three years of age.)

The hardness of the bones may be increased by the exhibition of lime water.

Take of Lime water, 2 ounces.

Let one teaspoonful be taken in milk three times a day.

(The above is intended for a child three or four years old.)

The little patient must not be allowed to use his crooked extremities; but they must be bandaged to a straight splint to prevent any increase in the deformity already existing.

WHITE SWELLING, OR SCROFULOUS DISEASE OF THE JOINTS.

Any injuries of the joints occurring in persons of the strumous diathesis are apt to be followed by chronic disease of a low character, giving rise to well-marked symptoms, and gradually exhausting the powers of the patient. The large joints are more frequently involved than those of smaller size, especially the knee and hip, and very often the elbow and ankle. Perhaps the knee is most often seen suffering from this disease, and it is to this joint that the popular term "white swelling" bears special reference. Not only may this morbid condition be due to injury, but it may arise from idiopathic and chronic inflammation. The whole joint becomes disorganised, the cartilages undergo a process of ulceration, the ends of the bones become carious, and abscesses are formed, and burrow about in the substance of the surrounding tissues. The first symptom arousing suspicion is a gnawing pain settling in the affected part, and other parts of the same limb soon begin to sympathise; thus, in scrofulous disease of the hip joint, there is acute pain in the knee; and when the elbow is the seat of the disease, there is sympathetic pain in the wrist. As time advances the sufferings of the wasted patient become intensified, the limb starts during sleep, his rest is broken, and his appetite and general health much impaired. The diseased joint now begins to swell and assume a rounded or globular form, the skin being of a delicate whitish-brown hue over and around the affected part, and mapped out by the meanderings of large blue veins. When the knee joint is affected, the patient instinctively flexes or bends the limb a little, and touches the ground with his toes only. This disease occurs in the scrofulous, and most often makes its appearance in persons of middle age; but any medical man in large practice will be able to call to mind many cases of this affection occurring in persons of all ages. The author has at the present time under his care a case of scrofulous disease of the hip joint in the person of a boy only nine years old. As previously stated, persons who are by nature predisposed to this disease, are very liable to become affected with it after meeting with any accident, even though it may be of the most trivial character. This disease requires some caution in making a diagnosis. By the careless or inexperienced it may be easily confused with rheumatic inflammation of the joint; for in such cases the synovial membrane, or that membranous structure which pours out an albuminous fluid to lubricate the surface of the joints, becomes involved in the inflammatory process, fluid is effused in large quantities, and the knee, of course, much swollen. If there be any difficulty, the advice of an experienced surgeon should be sought. The following are a few points worthy of attention, and due consideration. Inflammation of the synovial membrane is not so insidious in its attack as white swelling: in the former affection, fluctuation is distinctly felt by pressing upon the two sides of the joint; while the latter communicates a more solid feel to the fingers. Rheumatic inflammation of the joints makes its appearance, and becomes fully developed in a much shorter space of time than scrofulous disease of the same parts. White swelling occurs in persons of a scrofulous and broken-down constitution, but rheumatic inflammation generally happens to persons of full habit. This strumous disease may gradually proceed to different terminations: in the most favourable cases the joint becomes perfectly stiff and rigid, and though deprived of motion, the limb still forms a firm support for the body; in others the disease goes from bad to worse, puriform matter is formed in the joint, the cartilages and ligaments are utterly destroyed, the surrounding parts quite disorganised, and the patient gradually sinks from exhaustion and hectic fever.

Treatment.—No method of treatment will have any chance of success in the later stages of the disease; but on the first appearance of any weakness or pain in the joint, perfect *rest* must be enjoined. If the arm be affected, a gutta-percha splint should be moulded to it, or a starch bandage applied. Some surgeons spread some form of *plaister* on stiff leather, and strap the joint firmly to keep it quiet.

After the joint has been duly supported by one of the above means, the hand may be placed in a sling, and the patient allowed to take plenty of exercise in the open air, he should be put upon good diet, and some one of the following remedies must be tried. When any joint of the lower extremity is implicated, as in the case of the elbow, perfect rest must be enjoined; and during the more acute stage, the patient should be confined to bed. If the hip joint be the seat of the disease, a long splint should be applied to the affected side, as in cases of fractured thigh, reaching from the armpit to the sole of the foot, or the hip may be surrounded by a closely-fitting gutta-percha splint. The knee joint must be kept quiet by a splint applied to the back of the leg, or by a gutta-percha one moulded to the joint, as in the case of the hip and elbow. During the convalescent stage the patient may be allowed to get up and take fresh air, but should be supplied with crutches, and his leg supported by a bandage round his neck. When any inflammatory attack supervenes, blood may be abstracted by leeches, and counter-irritation is useful; the hot iron has been applied in some cases with apparent advantage, but it is not in very general use at the present time. During the more chronic stages, blisters and iodine paint applied to the surface of the joint often afford relief, and are frequently followed by some improvement in the state of the affected part. Scott's dressing is a very favourite remedy among surgeons of the present day; it is applied thus: first, the joint is covered with strips of lint thickly spread with strong mercurial ointment, the affected part having been previously rubbed with spirits of camphor; then soap plaister spread on wash leather is firmly stretched over the covering of lint; and lastly, the whole is covered over with an ordinary bandage. This local application keeps the joint perfectly quiet, and is supposed to assist in the absorption of any fluid which may have been poured out. The diet of persons suffering from this disease must be liberal and nutritious, consisting of meat, eggs, and all kinds of delicacies, with wine and other stimulants. Cod-liver oil and iron should be prescribed in all cases where there is no irritability of stomach.

Take of Cod-liver oil, 4 ounces.

And, Take of Syrup of iodide of iron, 2 ounces.

Mix half a teaspoonful of the syrup with one tablespoonful of the oil, and take a dose thus prepared twice a day.

(The above is intended for adults, and the doses must be diminished for younger patients.)

When the system is much reduced, and the patient suffers from hectic fever, sulphate of quinine and acids do good.

Take of Sulphate of quinine, 12 grains.
Tincture of orange peel, 2 drachms.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

When there is much pain, opiates should be given, and a soothing draught at bedtime may be prescribed with advantage.

Take of Battley's solution of opium, 20 drops
Camphor water, 1 ounce.

Mix, and let the draught be taken at bedtime, and repeat the dose as found necessary.

(The above draught must be given to the adult only.)

If the disease be too far advanced to admit of any hope of cure, the surgeon will perform an operation, technically called *excision*, which consists of laying the joint open, and removing the ends of the diseased bone. We have seen this operation very successful in the hands of Sir William Fergusson and Mr. Henry Smith. When the disease has arrived at this advanced stage, the health so rapidly fails, that the patient will soon sink unless he be relieved by the above surgical means. Excision becomes, therefore, a very valuable operation, and has been performed of late years in many cases in which the limbs would have been amputated by our forefathers.

PILES, OR HÆMORRHOIDS.

Piles are small flattened tumours, situated either within or externally to the anus: they consist of inflamed mucous membrane, or of dilated, contorted, and thickened veins. Large piles, consisting of portions of mucous membrane, and in some cases of a whole ring of the mucous lining of the bowel in a state of congestion and inflammation, are apt to be forced out, and to appear externally after every evacuation; and when such is the case, the inflamed, tender, and painful pile being firmly pressed upon by the circular muscle, guarding the outlet of the bowel, of course, gives rise to excruciating pain, and in many cases to large losses of blood. In more chronic cases, the piles appear externally, and assume the appearance and outward characters of the surrounding skin, giving rise to no pain, but rendering the feelings of the patient uncomfortable, and leading in many cases to prolapse of the bowel. Hæmorrhoids which have assumed an *indolent or chronic form*, give rise to less acute symptoms than those which have been described as inflamed; there is a sense of fulness and discomfort about the fundament, pain in defæcation, sometimes prolapse of the bowel, and the patient is rendered unfit for active bodily work or mental consideration.

Inflamed piles give rise to a sense of fulness in the region of the anus: the patient complains of pain, heat, and itching, and frequently of a thin serous ill-smelling discharge. After going to stool, the piles are lower down, and some appear externally in the form of small *rounded* enlargements; they are tender to the touch, and oftentimes bleed. Besides giving rise to the above characteristic symptoms, hæmorrhoids cause irritation in other closely situated organs—thus, the bladder frequently sympathises with the bowel, giving rise to well-marked symptoms. The writer not long since had a woman present herself among the out-patients, as she thought, with symptoms of urinary calculus; but on inquiry, she had been suffering for some time past from bleeding piles, and on relieving this affection by appropriate remedies, this patient lost all her morbid feelings, and was discharged cured. In females, suffering from piles, irritation is frequently set up in the womb, causing pain in the back, and bearing-down pains in the body. When piles give rise to hæmorrhage, the motions are mixed with blood, and patients are apt to think they are suffering from dysentery; but the two diseases are very readily distinguished, when the symptoms peculiar to each are carefully weighed and contrasted. Thus, in piles we have the history of habitual constipation, or perhaps the patient is pregnant, or suffering from hepatic disease, and in most cases, there are one or two hæmorrhoidal enlargements externally; while in dysentery there is a frequent desire to go to stool, the motions are intimately mixed with blood, mucus, or puriform matter, there are griping pains in the abdomen, great prostration, and severe febrile disturbance, the disease being rare in this country, except in persons who have been much abroad.

Causes.—Anything tending to obstruct the flow of blood from the lower part of the bowels will act as a predisposing cause of this affection. Thus, it frequently occurs to the pregnant female, the gravid uterus pressing upon the large veins of the abdomen, and all but occluding their cavity. It is often seen in persons suffering from hepatic disease, the blood being greatly retarded at its entrance into and in its course through the substance of the liver. Habitual constipation is perhaps the most frequent cause of piles; and medical men in extensive practice every day meet with cases of this kind in females who lead a sedentary and indolent life, remaining in the house for days or even weeks together, taking no exercise, and neglecting the most simple rules of health. Such patients soon flag, the circulation becomes sluggish, the digestive organs impaired, and the bowels obstinately confined, purgative medicines being actually necessary. Now, we think that this state of habitual constipation does not depend upon any defect in the action of the bowels themselves, but it is rather due to the bad habits of the patient; for the bowels may be brought to act daily by habit, just as we may teach our stomach to look for dinner and other meals at certain hours during the day. Thus, many persons who dine late can go without food from breakfast at nine till dinner at five from the mere force of habit; but a person who is accustomed to breakfast at eight and dine at two looks for these meals at the stated hours. And so it is with the bowels: if they are accustomed to relieve themselves at a certain time every day, they will always look to do so, especially if the patient attend to the other wants of the body, such as exercise in the open air and regular living. Thus, by these means, without the action of drastic purgatives, which are too often prescribed by the older members of the medical profession, habitual constipation may be overcome, and other disagreeable affections warded off, not by depressing medicines, but by a healthy effort of the mind inducing a due attention to the laws and requirements of health, and to the wants of the system. Should aperients be absolutely necessary (for we do not pretend to say they can in all cases be discarded), those of the mildest character should be resorted to—thus, 5 grains of compound rhubarb pill may be taken every day just before dinner. Piles are frequently associated with the strumous diathesis, and they generally show that the patient is low in health.

Treatment.—The patient must be advised to take daily exercise in the open air. The diet should be nutritious, but not stimulating. The parts should be well washed with cold water after each evacuation, and in some cases cold water may be injected into the bowel. In persons who have been suffering much from a torpid state of the bowels, the organs of digestion must be improved by the administration of a gentle laxative once or twice a day, which will relieve the fulness of the vessels of the lower bowel, and bring the excrements into a soft state, preventing all straining on the part of the invalid. The following electuary will act well for this purpose :—

Take of Confection of senna, 2 ounces.
Sulphur, 1 ounce.

Mix, and let two teaspoonfuls be taken once or twice a day.

The piles, which appear externally, after being washed with cold water, must be smeared with the following ointment, and pushed back into the bowel :—

Take of Powdered galls, 1 drachm.
Lard, 1 ounce.

Mix, and form an astringent ointment.

In a relaxed condition of the mucous membrane, cubebs may be used with advantage, thus :—

Take of Powdered cubebs, 1 ounce.

Divide into eight powders, and let one be taken twice a day.

When the piles are inflamed, leeches should be applied, and the patient placed on low diet, and ordered a warm bath occasionally; warm poultices and hot fomentations being the best local applications.

Besides the ointment of galls as advised above, other astringent applications often prove themselves useful, and especially the *zinc lotion.*

Take of Sulphate of zinc, 15 grains.
Compound tincture of lavender, 1 drachm.
Water, ½ pint.

Mix, let a lotion be made, and the affected parts kept constantly wet with it.

Should none of the above remedies prove equal to the case, there are several surgical operations which may be resorted to, the aid of a surgeon being previously called in. Nitric acid may be applied in some cases, being especially useful in bleeding hæmorrhoids. Internal piles may be cut off by the tight application of a ligature round their base; and those situated externally should be removed by a pair of sharp scissors, the part being previously benumbed by Dr. Richardson's process of local anæsthesia.

PROLAPSE OF THE BOWEL, OR PROLAPSUS ANI.

In persons of delicate health, and those of the strumous diathesis, the coats of the intestines lose their tone, and the muscle guarding the outlet of the alimentary canal grows weak; so that portions of the bowel dip down and appear externally, giving rise to many unpleasant symptoms, such as inflammation of the mucous membrane, and a thin serous discharge. It occurs most frequently in young children, and the aged. Any morbid condition giving rise to straining on the part of the patient naturally predisposes to this affection; and in this way costiveness, piles, and urinary disease may act as causes.

Treatment.—The bowels must be regulated by mild aperients. The parts should be sponged with cold water, and gently returned. Astringent injections should then be thrown into the bowels, the best form being the decoction of oak bark, thus :—

Take of Bruised oak bark, 6 drachms.
Distilled water, ½ pint.

Mix, and let an injection be made for the bowels.

Tonics must be given at the same time, iron and quinine being best.

Take of Sulphate of iron, 12 grains.
Sulphate of quinine, 10 grains.
Dilute sulphuric acid, 1 drachm.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.
(The above is intended for adults only.)

Should the disease resist the above constitutional and local remedies, the surgeon must be called in; and he will be able to cure this troublesome affection by means of some surgical interferences, simple in nature, and attended with no danger.

RUPTURE, OR HERNIA.

Hernia signifies the protrusion of any viscus from its natural cavity, but is a term generally used in reference to the intestines. Packed together loosely as the bowels are, and being surrounded on all sides by strong muscular structures, they must be ever subject to more or less pressure, especially during violent exertion of the body, such as lifting heavy weights. The bowels being thus pressed upon at one point, must in time make pressure upon some other part of the abdominal walls, and portions of them escape through those regions of the abdomen which are naturally weak. Thus, hernial protrusions are frequent at the navel, and in one or other groin. In some cases the abdominal walls have been previously weakened by disease or injury, such as wounds, abscesses, or distension from within. The structures from which the bowels receive the most pressure are the diaphragm or midrib from above, and the abdominal muscles in front; the former descending with every act of inspiration, and the latter contracting in assisting in the expiratory process.

Ruptures are divided into three kinds:—First, the *reducible*, or that which will return into the abdomen of itself, or can be put back by a little gentle pressure and manipulation, technically called the "taxis." The second form is the *irreducible* hernia, or that which cannot be returned into the abdomen,—always remaining down and never going back; but the cavity of the bowel still remains free, and the circulation of the blood in its vessels has not been arrested. The last kind of rupture is by far the most important, as being very dangerous to life; it is called *strangulated* hernia. Like the previous form, it never recedes into the abdominal cavity; but it differs from irreducible hernia in the passage of the bowel being blocked up, the constriction allowing no fæces to pass, and effectually preventing the circulation of the blood beyond its grasp. This state of things soon ends in inflammation and gangrene if the bowel be not set free.

We wish to impress upon our readers the symptoms and general characters of this surgical affection, so that, upon its first appearance, they may be able to recognise it for themselves, and to take proper precautions; for, in many persons, there is a sense of delicacy about consulting a medical man in such cases; and hence the disease, on this account neglected and allowed to take its own course, causes much more dangerous symptoms than it would have done had it received the proper treatment at the outset. Again, persons knowing by *name* only the disease from which they are suffering, in many cases do not realise the actual nature of their case. Thus, we have frequently met with persons who are very careless about wearing their truss, and some who have actually given up the use of this instrument after wearing it for several years. Now, if such persons knew really in what this disease consisted, viz., the escape of a part of the bowel through an aperture of small size, and the constant danger of the intestine becoming strangulated, and the alimentary canal occluded, surely they would studiously try to keep so important a structure out of such danger, and not to add to the mischief which already exists in the simple form of reducible hernia; for we shall see that the strangulated rupture is to be relieved in most instances only by the performance of a surgical operation, and that this operation is one of great danger to human life, and requires great delicacy on the part of the operator.

(α) *Reducible Hernia.*—When a portion of intestine escapes from the abdominal cavity, a soft, rounded, compressible, elastic tumour is suddenly formed at some part of the abdominal parietes, growing larger as the patient coughs, or when he is in the upright position, but decreasing in size and almost disappearing on his assuming the horizontal posture. Flatulent noises are heard in such tumours, and they return into the abdomen with a kind of gurgling. There are two plans of treatment to be tried, one the palliative, consisting in the application and constant use of a truss; the other, the radical cure, for which a surgeon who has made this subject his special study must be consulted. We have seen this operation very successful in the hands of Mr. John Wood, of King's College Hospital, who has spent a very great deal of time in making this as perfect an operation as possible.

(β) *Irreducible Hernia* is that form in which the bowel cannot be returned, its cavity remaining clear, and its contents passing freely; the circulation of the blood through the tumour is not arrested. This kind of rupture gives rise to many disagreeable symptoms, such as constipation, dragging pains in the stomach, and vomiting; and the misplaced bowel is in constant danger of becoming strangulated. The only treatment which is applicable consists of supporting the tumour, and preventing its increasing in size by the application of a bag truss.

(γ) *Strangulated Hernia.*—In this form the bowel is irreducible, its passage occluded, and the circulation in its vessels stopped. We soon have all the symptoms of intestinal obstruction presenting themselves, and these are followed in a very short time by those of abdominal inflammation. There are flatulent pains in the belly, obstinate constipation of the bowels, and vomiting of biliary and mucous matters. As time advances, so the disease increases in severity. The abdomen becomes distended and tympanitic; there is intense pain and tenderness on pressure; the vomiting becomes stercoraceous; the countenance is expressive of intense anxiety; the features shrink, and are bathed in cold perspiration; and the patient is restless, his pulse being weak, quick, feeble, and irregular. Prostration grows extreme; the sufferer lies on his back, with his knees drawn up; the sphincters relax, and fæces pass involuntarily; sordes cover his lips and teeth; and death soon terminates the miserable scene. The above is the natural course of the affection if not interfered with; but happily there are several means of averting this sad train of circumstances.

Treatment.—The principle guiding us in the treatment of strangulated hernia is to relieve the constriction and return the intestine. The passage which was previously occluded being thus again set free, and the circulation which was just now arrested being again started off, the patient is soon freed from danger, if the disease had not previously made too great advance. In all cases the assistance of an experienced surgeon is necessary at the very outset, and he will first try to reduce the strangulated bowel by gentle manipulation with his hands, having previously emptied the patient's bladder, and put him under the influence of chloroform. Should the taxis be unsuccessful an operation will be necessary, and should be early performed before the strangulated intestine has become inflamed and grangrenous. The operation essentially consists of cutting down, dividing the constricting band, and returning the bowel into its proper place; it is a dangerous operation, but has saved many lives which must have been inevitably lost had it not been for its timely performance. Thus we see that reducible hernia, which is the most common form, is not attended with any great danger if the bowel be kept up by the constant use of a nicely fitting truss; but if the patient neglect this means of safety the rupture comes down, and remaining in this condition, soon refuses to be returned, having assumed the irreducible form, and in all probability after remaining in this state for a short time, the worst form of hernia, viz., the strangulated form, is arrived at, and the patient's life must either be sacrificed, or rescued from the open jaws of death by the timely performance of a surgical operation. Patients cannot bear this fact too strongly in mind in reference to this subject, that the time to treat this affection is when it first appears in the reducible form; the truss should be constantly worn by day, and if the patient will not wear it at night, it should be applied in the morning before he rises.

Not only has this affection been subdivided according to the actual condition of the hernial tumour, but several forms have been separately described according to the place at which the bowel leaves the abdominal cavity; of these only one needs to be considered in a work written for general family use.

Umbilical Hernia.—When the hernial-protrusion is situated in the region of the navel it receives the above name; this form is most common in infants, but is frequently met with in women who have borne many children.

Treatment.—The rupture must be reduced, and kept back by a pad placed over it, and bound in that position by a bandage or elastic belt, the pad being made of ivory, india-rubber, or cork. Mr. Wood has been able to cure this form as well as the more common kinds of hernia by an operation called the *radical cure,* which was originally devised by himself, and which has since been worked up to its present efficiency by the perseverance and skill of the same gentleman. Hernial protrusions appearing in other positions must be treated on the same general plan, viz., by reducing them and keeping them back by some form of truss.

STONE.

A calculus in the bladder gives rise to the following symptoms: a frequent desire to pass water, a sense of constriction and irritation at the neck of the bladder, pain at the end of the penis, and sudden stoppage of the flow of urine during the act of micturition, the stream regaining its former volume when the patient throws himself on his hands and knees. It is important that the symptoms of this disease should be understood by every one, for if it be early recognised while the stone is yet small, the cutting operation may be avoided, the surgeon being able to crush a small calculus, and so let it gradually come away in small pieces with the urine.

Treatment.—All pain and irritation must be relieved by the use of alkalies and sedatives, thus:—

Take of Bicarbonate of potash, 2 drachms.
Tincture of henbane, 1½ drachm.
Camphor water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

After the irritability of the bladder has been overcome, and the patient's health improved, there are two operations for the removal of the foreign body, one consisting of *crushing*, and the other of *cutting into the bladder* and removing the stone by a pair of forceps; the former is technically called lithotrity, and the latter lithotomy.

Lithotrity, or the crushing operation, may be resorted to when there is only one stone, of small size and soft texture; hence the advantage of such cases coming early under treatment, for urinary calculi often grow very quickly and attain a size too large for the less dangerous operation of lithotrity; for this operation, too, the urethra must be large, and the bladder in a healthy condition.

Lithotomy is indicated when there is more than one stone, or when it is so hard as to resist crushing, and in cases where the bladder and urethra are irritable and diseased. This operation is attended with the best results in children, but is very fatal in adult life.

WENS.

Wens are encysted tumours most frequently affecting the head and face; they contain some crystals and oily matter, and occasionally end in suppuration. The tumour should be opened with a scalpel, and the cyst dissected out.

FRACTURES.

In most cases of fracture and dislocation, there is something peculiar requiring previous experience and surgical practice, so that the aid of the surgeon should, if possible, be obtained. We shall, therefore, only make a few practical remarks in reference to each of these subjects.

Fracture of the lower jaw must be treated by firmly supporting the fragments by a handkerchief placed under them, and firmly tied round the head.

Fracture of the collar-bone usually takes place in the middle of the bone, and is most frequently due to indirect violence. The injured parts must be kept at rest by three handkerchiefs thus applied: one as a pad in the armpit to keep the shoulder out, another to bind the arm to the body, and the third should be used as a sling to support the hand.

Fracture of the upper arm.—For the cure of this accident three short splints must be applied round the arm, reaching from the shoulder to the elbow joint; one on the outer side, another on the inner side, and the third behind, the whole being tightly bound together with an ordinary bandage; the arm should then be placed in a sling, and all the parts kept at rest. If the bone be broken low down, an angular splint must be applied, the elbow being bent at right angles.

Fracture of the fore-arm must be treated by the application of splints to the anterior and posterior sides of the limb, the elbow should then be bent at right angles, and the thumb being placed uppermost, the hand must be brought close to the body, and supported in a sling.

Fracture of the ribs.—In all injuries to the trunk in which any of the ribs are broken, a broad flannel bandage should be bound firmly round the body, so as to keep the injured parts at rest, and to allow of their union.

Fracture of the thigh.—In all cases of broken thigh there is great danger of the limb becoming shortened; this deformity should be guarded against by a long splint reaching from the armpit of the affected side to two inches below the sole of the foot, the splint being bound to the chest and leg by an ordinary roller; the limb must then be gently extended by the application of a perinæal band.

Fracture of the leg.—When the bones of the leg are broken, splints may be applied to the sides or the back of the broken limb, and the leg supported by a firm bandage.

DISLOCATION, OR LUXATION.

Dislocation of the shoulder.—The most common form of this dislocation is that in which the head of the bone is pushed down into the armpit. This state of things may be remedied by placing the foot in the patient's axilla, forcing the head of the bone backwards and outwards, and at the same time pulling the limb downwards and forwards. There are several other methods of treating this accident, but this is the one in general use.

Dislocation of the elbow.—The elbow may be dislocated in several ways, but may be easily reduced by grasping the arm firmly above the joint, and making simple extension by means of the bones of the fore-arm. *Dislocation of the fingers, thumbs, and toes* must be treated in the same manner.

Dislocation of the hip generally requires the aid of pulleys for its reduction, one being fixed above, and the other below the joint; by means of these, firm and equable extension may be made in the necessary direction for the easy reduction of the dislocated joint.

Readers are requested to take notice that all the preceding prescriptions, given under the heads of various diseases, are intended for adults, unless it be otherwise stated, and that they will require altering in strength according to the age of the person to be subjected to treatment. It must be remembered that some drugs act more powerfully on some people than on others: thus opium and its preparations must be given with great care to children, for they are soon affected by this drug, while on the other hand they can take much larger doses of the various preparations of mercury than adults, in proportion to their age. The annexed table of doses by Gaubius will be found useful:—

Ages.	Proportional quantities.	
For an adult	Suppose the dose to be . 1	O 0 grains.
Under 1 year	Will require only . . 1/12	„ 5 „
„ 2 years	„ „ „ 1/8	„ 7½ „
„ 3 „	„ „ „ 1/6	„ 10 „
„ 4 „	„ „ „ 1/4	„ 15 „
„ 7 „	„ „ „ 1/3	„ 20 „
„ 14 „	„ „ „ 1/2	„ 30 „
„ 20 „	„ „ „ 2/3	„ 40 „
Above 21 „	The full dose . . . . –	„ 60 „
„ 65 „	The inverse gradation of the above.	

THE MANAGEMENT OF INFANCY AND CHILDHOOD.

CLOTHING.

A FEW words in this place must be added upon the clothing of a newly-born infant, for upon this depends in great measure the future welfare of the child. As soon as it has been well washed, its head should be covered with a small flannel cap to shield its tender surface from draughts, and all forms of cold and moisture; this may be worn for a period of two or three months, according to the constitution of the little patient, and at the end of that time must be gradually given up. Some mothers and nurses now dress the child in a light linen cap, but this is not at all necessary, and in many families this custom of heating the infant's head is entirely dispensed with, it being now known that the constant rubbing of the linen against a delicate skin more or less prevents the healthy development of the hair. The body of the child must be supported by a flannel roller loosely but firmly applied, so as to lend warmth to the system and protect the spine without impeding the action of the bowels. The clothes should be warm but not heavy; they must be loose and fastened with as few pins as possible, for in the many movements which the infant makes it is very liable to be pricked or scratched, and many cases of infantile convulsions have been traced to this cause; the thoughtful and attentive mother will therefore in many cases avoid the use of pins by fastening the various articles of dress by means of a few stitches with a needle and thread. The writer wishes to impress upon the minds of mothers and nurses the great danger of putting on an infant's clothes without having them properly aired. In the general routine of practice the medical man frequently hears of this being done with a view of strengthening, it may be, a delicate child. This practice must sooner or later end in some serious mischief, causing in children of so tender an age some acute or inflammatory affection of the lungs, as in riper years it frequently terminates in an attack of rheumatic fever. This subject has been generally treated in a previous part of this book, and may with advantage be consulted in connection with the above.

DIET.

Soon after birth, when the mother has recovered from her fatigue, the infant should be put to the breast, for although there may be *no very* nutritious milk present at so early a period, yet there is a modification of it in the lacteal vessels, the removal of which will have a beneficial effect both upon mother and child, gently acting upon the bowels of the latter, and relieving the breasts of the former. By this means also the child soon learns by instinct the healthy actions of sucking and swallowing, and the risk of bleeding from the uterine vessels is less, while the after pains are much diminished in severity. Children who are kept from the breast till the second or third day and fed on milk and artificial food become sickly and weak, and do not care for their natural food. In the earliest days of infancy the child should be suckled once about every two hours, the period of time between each suckling being gradually increased as the child grows older. If the infant be kept constantly at the breast its stomach will become distended, and the little patient, suffering pain, will be fretful and restless, and its digestive powers will be much disarranged. When the mother is of good constitution and has plenty of milk, no other food will be necessary for the healthy maintenance of the various functions of the infant, but in some cases artificial food becomes absolutely necessary, either from a delicate state of the mother's health or from the child's being unable to suck. The food in most common use in such cases is made by boiling crumb of bread in water, care being taken to prevent its burning, and a small quantity of sugar being added to make it palatable; when the child is five or six months old, a little milk may be mixed with the bread, previously boiled in water, the quantity of milk being increased as the child grows older. In some cases rusks boiled in water agree with the infant better than ordinary bread, sugar being added as before to make it palatable. Good wholesome nutritious food may be made from the farinaceous mixture prepared by Hards, of Dartford, from Lemann's Biscuit Powder, or from Liebig's Food for Infants. In mixing any kind of food, sugar should be added in small quantities only, for fear of impeding digestion, and a few grains of table salt should be mixed with each cupful. It is of great importance in the diet of infants that all the milk should be obtained from one cow, for if there be a mixture of milk from several, or if it be impure, it will certainly disagree with the delicate stomach of the little patient. In all cases in which it is necessary to feed a child with artificial food, this should be done by means of a proper bottle, and not by an ordinary spoon, for by the constant use of the former the healthy action of sucking is encouraged. Edwards's patent Cornucopean Feeder for invalids and children will be found useful, the supply and flow of liquid being regulated by a patent valve air stopper, and the patient is enabled to suck or draw any desired quantity into the mouth; this form of bottle may be obtained of Messrs. Walls, Close, and Co., 42A., Cannon-street, E.C. The author was much pleased upon reading the description and studying the mechanism of Botham's new and improved infants' feeding bottle, which is furnished with a patent regulator for the food to pass through, so as to exactly fill the glass tube above, and prevent the admixture of air and the consequent painful distension of the infant's stomach;

the food has also to pass through a series of valves of triangular shape, closely resembling in form the bites of the medicinal leech, and is thus carefully strained. This bottle has the advantages too of being easily cleaned and keeping the food sweet; it may be obtained of W. Botham, 19, Old Haymarket, Sheffield, or of any respectable chemist, for the sum of eighteenpence. An infant will seldom require to be fed more than twice during the day, if the mother has any milk at all, and great care must be taken to guard against overloading the stomach of so delicate a patient. From what has been previously stated, the mother will see that her child should if possible be suckled, and that for the first six months his diet should consist exclusively of milk, for, as was stated in the earlier pages of our work, this secretion, so wisely provided by nature, is the fittest food during the period of infancy. Milk is the only food on which animals are able to exist without its being intermixed with other substances, and under the head of Digestion and Diet we have already fully considered this subject, and found that it contains all the elementary constituents of food necessary for the well-being of the creature; thus it contains albumen in the form of casein, oil in the form of butter, and sugar as lactose or sugar of milk. On careful examination there are also found phosphate of lime, various salts, and a trace of iron, the former two giving hardness and solidity to the bones, and the latter keeping up the normal composition of the blood. Dr. Charles West, in his admirable work upon the "Diseases of Infancy and Childhood," speaks of milk as "the proper aliment of the young," and the eminent surgeon, John Hunter, was in the habit of saying that to rear healthy children there must be "plenty of *milk*, plenty of sleep, and plenty of flannel." To sum up, then, artificial food will seldom be required during the first six months from birth, when the mother has a fair supply of milk, but at the end of that time the child may be fed twice or three times during the twenty-four hours to pave the way for its subsequent weaning, which should be effected before the child is twelve months old. When the mother is altogether prevented from suckling, the child should be supported for the first six months from the breasts of a healthy, carefully-selected wet-nurse, and may then be fed as previously recommended. The system of the mother must be well supported during the period of suckling, meat should be freely partaken of, and she will require a liberal supply of ale or stout. The health must be duly maintained by the avoidance of late hours and all practices tending to lower the powers of the system. The influence of mental emotion upon the lacteal secretion is very marked, and in some cases the milk has by its action become much altered in character, and even rendered injurious to the child. The mind of the mother should then be shielded from all excitement, and kept at perfect rest and quietude during this important period. Between the ages of nine and twelve months the infant should be weaned; this must be done gradually, the mother giving it less and less of the breast and increasing in proportion the quantity of artificial *food*. If possible, she should leave home for a week or two, transferring the care of her child to a trustworthy servant or nurse, with whom he should now sleep. The breasts of the mother will in all probability become tense, full, knotty, hard, tender, and somewhat inflamed, but may be relieved by acting upon the bowels by the administration of some mild purgative, for which purpose the following will be found useful:—

Take of Sulphate of magnesia, 1 ounce.
Wine of colchicum, 2 drachms.
Compound tincture of lavender, 2 drachms.
Pure water, 6 ounces.

Mix, and let a sixth part be taken three times a day.

The breasts should be gently rubbed with the following liniment:—

Take of Opodeldoc, 2 ounces.
Spirits of camphor, 2 drachms.

Make a liniment, and let the parts affected be rubbed every night and morning.

VACCINATION.

This subject has already been briefly alluded to when describing the symptoms and treatment of small-pox, and it was then stated that since its introduction by the eminent Dr. Jenner, in 1796, the fatality of this terrible disease has been much diminished. Thus, at the present time, the number of deaths from small-pox is only one-eleventh part of what they were previously to this grand discovery. We think the subject of so great importance, that we again introduce it at the present point of this work as worthy of the consideration of mothers who are looking to the welfare of their children while yet in their earliest infancy; as this operation should, without doubt, be performed during the first three months after birth, and if the child be healthy, it may, with advantage, be vaccinated at the end of the fourth week; for the sooner the infant is protected the better, and the less liable will he be to rub his arm. Previous to the introduction of the system of inoculation, it has been calculated that 40,000 persons in the British Isles alone annually fell victims to the deadly grasp of small-pox. Inoculation was subsequently found to be of great advantage to those actually operated on; but to be extremely dangerous to those not thus protected; for although it increased the individual security, yet, by multiplying the sources of contagion, it added to the general mortality. It has been urged by some that vaccination does not always secure the individual from small-pox: but the same argument may be used in reference to the practice of inoculation; and in those cases of small-pox occurring after vaccination, the disease assumes a modified form in which the initiatory fever is much less severe, the eruption less plump and of shorter duration, and the secondary fever scarcely, if at all, noticeable. If the infant should be delicate, or troubled with any eruption upon its skin, vaccination must be postponed to a later period; for this operation will be much hindered, if not altogether defeated, by such untoward complications.

Upon the eighth day after the performance of vaccination the vesicle will have become mature, and the medical man should puncture it in several places so as to allow of the escape of the contained fluid; for by this means the child's arm will be materially relieved, and much of the troublesome inflammation, which frequently follows, will be entirely prevented; but if there be only one vesicle, it may be let alone, and allowed to run its natural course. Some parents have altogether discarded the principle of vaccination for fear of introducing some unhealthy virus into the system of their child, and thus injure its future health: although there may be some plausibility in this objection, still the same may be said of the practice of inoculation, and this matter may be easily rectified by placing it in the hands of the conscientious family medical man. It is the general opinion that the protective influence of vaccination becomes worn out at the expiration of seven years from its performance; but Mr. Pye H. Chavasse, in his admirable little work, entitled "Advice to a Mother on the Management of her Offspring," fixes the time for re-vaccination at twelve years; and Dr. West speaks on this matter in the following decided terms:—"Different views have been taken by very high authorities upon this subject; but there is one important fact, concerning which nearly all are agreed, namely, that the liability to a subsequent attack of small-pox is almost incalculably diminished by re-vaccination. Considering, then, how simple the operation is, and how nearly painless its performance, while the benefit to be obtained from it is so inestimable, I would strongly urge you to re-vaccinate all persons turned twelve years old, even though they had been vaccinated with the most complete success in their infancy." During the progress of the vaccine vesicle medicine will not generally be required, for by the irritation it sets up it is apt to hinder its natural course to maturity. After the eighth day, when the vesicle is matured, a mild purgative may be given, if the infant be irritable and feverish. Thus:—

Take of Powdered scammony 9 grains.
Calomel, 3 grains.

Mix, and divide into three powders, one of which should be taken as required.

(The above prescription is intended for an infant two or three months of age).

Great care will be necessary to prevent the arm being rubbed, or the vesicles will be prematurely broken, and the protective influence of vaccination much impaired. Should the arm be greatly inflamed after the vesicle is matured, the tender part may be covered by a light warm linseed poultice.

DENTITION.

Dentition is one of the most important processes of infantile life; for during its course the little patient is subject to many trying *diseases,* such as convulsions, cough, eruptions upon the skin, and disordered bowels; and great care and attention will be necessary at this period. Children cut their teeth at different ages, the most common time at which this process begins being at the end of the seventh month; but instances have been placed on record in which children have been born with teeth already through the gums, others have cut them at the age of three months, while in some cases teeth have not appeared till the second or third year, and in rare instances, adults have been met with who have never had any. The first set of teeth, or the temporary or milk teeth, are twenty in number, and are generally produced in the following order—those in the lower jaw being a little in advance of those of the upper: the two lower front teeth are the first to be produced, then the two upper, and these are soon followed by the remainder of the lower and upper front teeth; and in the course of a few months the lateral and posterior grinders of both jaws make their appearance. When the gums are hot, tender, red, and swollen, and the child is cross and fretful, the part affected should be lanced over the protruding tooth, which is evidently pushing its way to the surface with great difficulty, and may if not assisted, give rise to a severe attack of infantile convulsions; and in some cases this operation will have to be repeated from time to time, as circumstances may require. Should the little patient become convulsed from the irritation thus set up, cold water should be freely dashed upon his face, and his body should be immersed for ten minutes or a quarter of an hour in a hot bath, or one containing hot water mixed with mustard, so as to bring the blood as much as possible to the surface, and relieve internal congestion. Mustard poultices may be applied to the nape of the neck, or to the calves of the leg, and the following aperient powder should be given:—

Take of Scammony powder, 3 grains.
Calomel, 3 grains.

Mix thoroughly, and let it be taken immediately in a little preserve.

(The above prescription is intended for a child a year old, and must be varied in strength according to the age of the infant.)

The surgeon should be summoned at once, and he will examine the sufferer's gums, and, if necessary, relieve the local irritation by gently incising them with an ordinary gum lancet, and in many cases of this kind, the convulsions cease at once upon the performance of this simple operation, thus plainly showing that all the irritation was caused by the difficult advance of the protruding tooth. After the child is taken from the warm bath, its trunk and extremities should be gently rubbed, and he must then be placed in a warm blanket near a small fire. About the end of the seventh year of childhood, the temporary or milk teeth begin to loosen and drop out, and are gradually replaced by the second, or permanent teeth. The former are twenty in number: but the latter, including the wisdom teeth, which are cut later in life, consist of thirty-two. The process of second dentition is easily accomplished, and is not attended by any diseases as in the case of the cutting of the milk teeth. Great care and attention should be bestowed by mothers upon the appearance and growth of the permanent teeth; for they are not only ornamental, but the general health in years to come will in great measure depend upon their state of perfection. Any deviation, then, in their production should at once be remedied by seeking the advice of some dental practitioner.

SLEEP.

It is a well-known fact amongst those who are brought into frequent contact with children, that they thrive but little if anything presents itself to disturb and break their natural rest. Thus, infants which have been small and delicate when first born, from their natural propensity to sleep, grow and thrive more than others of strong constitutions, who have by some means been deprived of their slumbers. The sleeping apartment of an infant should be moderately warm, and for the first few months he should not lie alone; for, as stated in the earlier part of this work, children keep up their normal temperature much more imperfectly than adults. The habit of rocking a child to sleep is quite unnecessary; for unless he be accustomed to this indulgence—if he be properly brought up—he will naturally fall asleep at suitable hours. The crib should be perfectly free from all kinds of covering, so that the child may have the advantage of as much pure air as possible. Although sleep is so necessary to the well-being of the infant, composing medicine should on no account be given, except under the special directions of a medical man; for by the use of such drugs, the stomach and digestive organs become disordered, and the bowels constipated, and all the other vital functions becoming involved, the child soon flags and loses his appetite, and becomes sickly and emaciated.

ABLUTION.

Cleanliness is one of the greatest and most powerful means of preserving health both in children and adults, and it may be laid down as a general rule, that newly-born infants and children should be thoroughly washed every morning, and that the limbs and body should again be partially washed at night before putting the child to bed. In washing an infant, some nurses are in the habit of using cold water, under the impression of strengthening the child; but this is in every respect an erroneous idea; for, on the contrary, it is a frequent cause of inflammation of the eyes, cough, and other infantile diseases. The water used should be neither hot nor cold, but lukewarm. In summer, rain-water will suffice; but in the winter months, more or less warm water must be added, according to the temperature of the external atmosphere. Great care will be required in rubbing the child dry after every ablution, and the armpits, hams, and flexures of the joints should be washed thoroughly; for if not, the child's skin will become chafed, causing great pain and irritation, so that the little sufferer is cross and fretful. After the limbs have been carefully washed and well dried with a soft towel, they should be covered over with violet powder. Notwithstanding the above precautions, should any part of the child become chafed and inflamed, it must be washed with tepid rain water, carefully dried, and dusted over with finely-powdered starch, or the part affected may be bathed with Fuller's earth and water. If the child be delicate, advantage may be derived by adding a handful of table salt to the water in which he is to be washed.

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THE END.

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